

**How Can Companies Recover from Liability-Invoking Failures? Exploring the Role of Uncertainty Avoidance in Facilitating Consumer Compliance Across National Cultures**

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## ABSTRACT

A company often faces incidents in which its offerings cause bodily (e.g., product safety defects) or psychological (e.g., data breach) harm to its consumers. Such incidents may invoke product liability lawsuits against the company. The company may seek to recover from the liability-invoking failure by notifying the affected consumers, offering a remedy, and persuading them to comply with the company message. The authors theorize and experimentally demonstrate that, on average, a prevention-focused message receives greater compliance than a promotion-focused message. Further, a prevention-focused message is more effective with consumers from high uncertainty avoidance cultures, whereas a promotion-focused message is more effective in low uncertainty avoidance cultures. Perceived compatibility of prevention or promotion goals with low or high values of uncertainty avoidance mediates the interaction effect on compliance. The findings help companies overcome consumer apathy to product recall or data breach notices and offer managers ways to promote consumer safety and protection.

*Keywords:* product recall notice, data breach notice, regulatory focus, national culture, uncertainty avoidance

## INTRODUCTION

Companies are often at the receiving end of *liability-invoking failures*—incidents in which their offerings have caused bodily and/or psychological harm to consumers, who may invoke product liability lawsuits against the companies (Cleeren, Dekimpe, and van Heerde 2017; Keiningham et al. 2014; Schneider et al. 2017). Further, the globalization of supply chains means that these failures frequently attain international scope, affecting consumers in multiple countries. For example, the safety defects in Takata’s airbags and seat belts affected consumers worldwide (Einstein 2020), while the Equifax data breach compromised the identity of consumers in 24 countries (Myers 2017). In the wake of a liability-invoking failure, companies are required to notify the affected consumers of the failure and the remedy offered (e.g., free repair of a defective car or free credit monitoring after a data breach) and persuade them to accept the offered remedy by complying with the notification message (Pagiavlas et al. 2021). Despite these efforts from companies, consumers often do not comply with their messages (Humphries 2014; Mele 2018; RAND Corporation 2016). Low consumer compliance exposes companies to liability risk (Crosley Law 2020) and risks the safety of their consumers (Eisenstein 2016; Skrovan 2017). For example, only 12% of the cars recalled in the U.S. for faulty Takata airbags have been repaired; however, this percentage in Japan is 70% (Atiyeh and Blackwell 2021). We investigate how international marketing academics can help solve this consequential problem of the ineffectiveness of company messages seeking consumer compliance in the wake of liability-invoking failures.

Harm activates prevention, while safety makes promotion salient (Higgins 1997; Lee et al. 2021; Micu 2010). Therefore, company messages to the affected consumers can focus on either preventing harm (i.e., prevention focus) or promoting safety (i.e., promotion focus). The theory of regulatory focus (Higgins 1997) suggests that some sets of consumers are motivated by prevention focus, whereas others are driven by promotion focus (Higgins and

Tykocinski 1992; Idson, Liberman, and Higgins 2000). Which of these two foci would elicit greater compliance in the context of liability-invoking failures is a priori unclear, thus, presenting a dilemma for managers.

We theorize that the uncertainty avoidance (UA) dimension of consumers' national culture interacts with the regulatory focus of the message to impact consumer compliance. Specifically, we posit that a prevention (promotion)-focused message is more effective with consumers from cultures characterized by high (low) UA. Moreover, we theorize the mechanism that underlies the interaction effects between regulatory focus of the message and the UA of consumers' national culture. More specifically, we reason that a prevention-focused message is compatible with the harm-prevention goal of consumers from high-UA cultures. In contrast, a promotion-focused message fits better with the safety-promotion goal of consumers from a low-UA culture. That is, *goal compatibility* is the mechanism that explains why prevention-focused messages elicit greater compliance from consumers from high-UA cultures, whereas promotion-focused messages are more effective in low-UA cultures.

We conducted two experimental studies as part of our research. Study 1 used a car safety recall as the context and participants from the United Kingdom (national culture with low UA) and Hungary (high UA). Study 2 used a data breach at a bank as the context and employed participants from South Korea (high UA) and China (low UA) as participants. Our research contributes to the theory on international marketing (IM) in several critical ways. Specifically, extant work has largely researched regulatory focus theory and national culture independently (e.g., Bahadir and Bahadir 2020; Kim 2021; Kumar et al. 2021; Westjohn et al. 2016; see Table 1). We study the individual effect of regulatory focus and its joint effect with national culture on the consequential outcome of consumer compliance in an international marketing context. In doing so, we take the IM literature to a new and consequential territory

(Cleeren, Dekimpe, and van Heerde 2017; Pagiavlas et al. 2021). Specifically, the theoretical insights are that in the context of liability-invoking failures, (1) a prevention-focused message is more effective for high-UA cultures, whereas a promotion-focused message works better for low-UA cultures, and (2) goal compatibility is the underlying mechanism.

In addition, our findings are consequential for different stakeholders, such as companies, governments, judiciaries and the regulatory, who strive to make recovery messages more persuasive but find a lack in theory-driven, empirical evidence in this context (e.g., U.S. Department of Justice 2018; U.S. Federal Trade Commission 2022; U.S. Government Publishing Office 2015).

[Insert Table 1 about here.]

## **LITERATURE REVIEW: LIABILITY-INVOKING FAILURES**

Liability-invoking failures are pervasive (Cleeren, Dekimpe, and van Heerde 2017; Keiningham et al. 2014). For example, in 2021 automobile manufacturers recalled 34.3 million vehicles across 1,093 recalls in the United States—both counts substantially higher than those in preceding years (NHTSA 2022). Similarly, the European Union’s Rapid Alert System reported a significant increase in recalls, with 2,276 recalls in 2020 (Aon, 2021). A similar trend is observed in data breaches that skyrocketed in the United States from a mere 662 in 2010 to 1,001 in 2020, exposing 155.8 million records (Johnson 2021).

Such failures require managers to act promptly, offering a remedy to the affected consumers and encouraging them to avail the solution, thus, helping the company recover from the failure. Two types of liability-invoking failures are common. The first type includes product-harm crises, “discrete event[s] in which products are found to be defective and therefore dangerous to at least part of the product’s customer base” (Cleeren, Dekimpe, and van Heerde 2017, p. 594). Such crises are followed by product recalls, which are “a firm’s

removal of consumer products that have a safety-related defect and/or are noncompliant with applicable product standards” (Astvansh 2018, p. 4). The second type is a data breach, “the intentional or unintentional release of confidential, private, or secured data to an untrusted entity” (Buckbee 2017, p. 1). Like a recall, a data breach is often followed by the breached company notifying consumers of the breach, how it impacts them, and what actions they may take (e.g., monitoring their credit card transactions) to mitigate risk (e.g., identity theft).

International marketing academics have paid some attention to product recalls. Specifically, Majid and Bapuji (2018) have shown that the location of a company’s headquarters impact its responsiveness to product safety defects. Cheah, Chan, and Chieng (2007) have reported that investors in the United States and United Kingdom vary on whether they consider a pharmaceutical company’s social responsibility in penalizing it for manufacturing harmful drugs. However, to the best of our knowledge, the international marketing field lacks research on how cross-cultural variables explain heterogeneity in consumer response to company failures.<sup>1</sup>

A company’s liability-invoking failure evokes a negative response from its consumers (Astvansh 2018; Martin, Borah, and Palmatier 2017). Specifically, consumers view these failures as violation of expectations and thus penalize the company by lowering their behaviors that benefit the company (e.g., purchases, positive word-of-mouth). The company attempts to recover from liability-invoking failures by notifying the affected consumers of the failure and the remedy (e.g., free repair of a defective car, free credit monitoring after a data breach) and persuading them to accept the offered remedy (Pagiavlas et al. 2021). However, despite being offered a free remedy, consumers may not avail it. For example, Gibson (1995) found that the public’s lack of awareness of product recalls is the greatest driver behind inaction and noncompliance. Various empirical studies have investigated whether awareness

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<sup>1</sup> See Wood’s (2022) research on how culture explains heterogeneity in consumer response to the COVID-19 pandemic.

campaigns successfully promote compliance following liability-invoking failures (Grinstein and Nisan 2009; Pagiavlas et al. 2021; Wallington et al. 2018). Pagiavlas et al. (2021) found that regulator-initiated digital marketing campaigns could increase consumer recall compliance following product recalls in the U.S.

Apart from communication, recalling messages can also influence consumer compliance. For instance, Bae and Benitez-Silva (2013) examined the language the manufacturers used to communicate the seriousness of recalls in recall messages. In the context of vehicle recall announcements in the United States from 2007 to 2010, the authors found that communicating high hazard levels boosts consumer compliance. Leavitt (1979) found that consumers' perception of the threat level is the most important determinant of seeking medical care services. Consumers are more inclined to comply with a recall announcement if they believe noncompliance threatens their well-being (Bowman, Heilman, and Seetharaman 2004).

The extant literature has shed light on the importance of communicating defect seriousness and adopting digital marketing campaigns to enhance consumer compliance. However, the marketing discipline lacks knowledge about how to *frame* recall messages that lift consumer compliance and how the effectiveness of such framing is contingent on national culture. As research exploring product recalls and, to a lesser extent, data breaches, begins to acknowledge the importance of compliance, understanding the factors driving compliance becomes strategically important to companies and regulators.

### **CONCEPTUAL FRAMEWORK**

To address these research gaps, we theorize and empirically test (1) the effect of regulatory focus theory on consumer compliance, (2) the role of national culture on consumer compliance, and (3) the role of goal compatibility as the underlying mechanism (Figure 1).

[Insert Figures 1A and 1B about here.]

## **Regulatory Focus Theory and Consumer Compliance**

Research in psychology has suggested that consumers often value personal safety over everything else and take actions to promote their safety and prevent risks (Zeitlin 1994). However, organizational research has found evidence supporting the opposite. That is, despite being aware that a product is unsafe, consumers may continue to use it—even if such usage has fatal consequences—and disregard the company’s offer of free remedy (Pollack-Nelson 1995). Academics (Trendel, Mazodier, and Vohs 2018) have looked at psychological theories to promote positive changes in consumers’ attitudes and behaviors toward recovery messages.

The theory of regulatory focus (Higgins 1997) can help managers and regulators overcome the problem of consumer indifference toward recovery messages. The theory posits that some people are motivated to attain positive outcomes (i.e., promotion goals) and regulate their behavior toward achieving such outcomes (i.e., promotion-focused behavior). Promotion-focused individuals prioritize advancement and accomplishment and are concerned with the presence of positive outcomes or gains (Higgins and Tykocinski 1992; Idson, Liberman, and Higgins 2000). In contrast, other individuals may be motivated to avoid negative outcomes (i.e., prevention goals) and thus, regulate their behavior toward avoiding such outcomes (i.e., prevention-focused behavior). Prevention-focused individuals consider the presence or absence of negative outcomes (losses; Higgins and Tykocinski 1992; Idson, Liberman, and Higgins 2000). They strive to approach safety, while avoiding danger (Crowe and Higgins 1997; Higgins 1997) and attain their goals through avoidance-oriented behaviors. International marketing academics have applied regulatory focus theory in varied contexts (Table 1). For example, Westjohn et al. (2016) examined the role of regulatory focus theory in deciding whether companies should emphasize local or global symbols in



advertising to consumers in the U.S. and China. Kumar et al. (2021) observed its role in eliciting an individual's compliance with the COVID-19 protocols.

The extant literature confirms that promotion and prevention foci can be temporarily activated. For instance, they can be situationally primed (Zhou and Pham 2004) by prompting individuals to think about their hopes and aspirations (promotion focus) or their duties and obligations (prevention focus; Freitas and Higgins 2002; Pham and Avnet 2004; Westjohn et al. 2016). Alternatively, they may be triggered when making a person's independent or interdependent self-view more accessible (Aaker and Lee 2001).

Promotion and prevention foci can also be activated through message framing. More specifically, communicating gain information can trigger promotion focus, whereas communicating loss information can activate prevention focus (Shah, Higgins, and Friedman 1998). For instance, Mogilner, Aaker, and Pennington (2002) argued that product information is either promotion-framed (positioned as helping people achieve a positive outcome) or prevention-framed (positioned as helping individuals prevent a negative outcome). Similarly, Micu (2010) found that prevention-focused messages are more persuasive for utilitarian products, whereas promotion-focused messages are more effective for hedonic products. Lee et al. (2021) reported that prevention-oriented individuals have lower purchase intention when message framing is loss-oriented (vs non-loss-oriented). Promotion-oriented individuals have higher purchase intentions when message framing is gain-focused.

A company message that must inform consumers of the problem and solution and elicit compliance faces an interesting dilemma. On the one hand, the message can focus on the problem and costs of not complying (i.e., prevention focus). On the other hand, the message may emphasize the solution and benefits of complying (i.e., promotion focus). Drawing on the arguments of Micu (2010) and Lee et al. (2021), each prevention- and

promotion-focused messages can elicit favorable responses, and consequently, we pose the dilemma as a research question:

*Research question: Does a post-failure recovery message with a prevention focus (vs. promotion-focus) achieve higher consumer compliance than a message with a promotion focus (vs. prevention-focus)?*

### **Interaction between Regulatory Focus Theory and Uncertainty Avoidance Dimension of National Culture**

Whether consumers favor promotion- or prevention-focused messages is contingent upon the national culture to which they belong (Aaker and Lee 2001; Higgins and Scholer 2009). National culture is “the collective programming of the mind distinguishing the members of one group or category of people from others” (Hofstede, Hofstede, and Minkov 2010, p. 6). Of the six dimensions of national culture defined by Hofstede, Hofstede, and Minkov (2010), the dimension of UA is compatible with the logic of regulatory focus and our context of a company recovering from a liability-invoking failure. UA reflects the extent to which members of society engage in behaviors that minimize uncertainty. High-UA societies strive to achieve predictability and controllability. Low UA societies are open to change and innovation and prefer unplanned settings and improvisation (Hofstede, Hofstede, and Minkov 2010).

International marketing academics have studied the role of UA in driving product diversification (Qiu 2014), technological innovation (Griffith and Rubera 2014), consumer stockpiling (Ahmadi et al. 2021), product avoidance (Leonidou et al. 2019), electronic word-of-mouth (Tang 2017) or loyalty program choice (Thompson and Chmura 2015). Similarly, research has highlighted the impact of UA on financial development and advertising spending (Bahadir and Bahadir 2020), consumer responses to switching costs (Pick and Eisend 2016), relationship quality (Hoppner, Griffith, and White 2015), word-of-mouth referrals (Schumann et al. 2010), and banner advertising effectiveness (Möller and Eisend 2010). More recently, researchers have shown that UA drives perceived financial

vulnerability (Lixun et al. 2022), affects the cyclical behavior of companies' research-and-development expenditure (Kim, 2021), and mediates the effect of infotainment on the attitude toward and value of social media advertising (Wesley et al. 2018).

We extend prior knowledge by demonstrating the importance of UA in driving consumer compliance following a liability-invoking company failure. More specifically, we argue that a nation's UA interacts with the regulatory focus in a company message to impact consumers' compliance with the message. We invoke the arguments introduced by De Meulenaer, Pelsmacker, and Dens (2017), who examined the role of UA in health risk message compliance and found that higher UA impacts message compliance. Therefore, we posit that UA also interact with the company message to impact consumer compliance.

People in high-UA countries are motivated to avoid risk and prefer avoidance strategies. These nations are concerned about security in life (Hofstede 2001) and value explanations (De Mooij 2010). They feel uncomfortable in unstructured situations, strive to reduce ambiguity, and prefer stability (Erdem, Swait, and Valenzuela 2006; Hofstede 2011). Research has shown that these nations focus on mitigating risk (Steenkamp, Ter Hofstede, and Wedel 1999). As high-UA individuals do not prefer the "unknown" and the "novel" (Erdem, Swait, and Valenzuela 2006), they may value a recovery message that reduces ambiguity and rebuilds structure by communicating the hazard clearly. Therefore, a recovery message that educates consumers about the hazard may be more beneficial, enhancing consumer compliance.

Low UA cultures are motivated to achieve gains and adopt approach strategies. People of these national cultures are more comfortable with novel and unusual situations, rely on informal norms, and feel less stress and anxiety (Leonidou et al. 2019). These nations are open to taking risks and feel more comfortable in unstructured and ambiguous situations. Consumers from low UA cultures are more likely to engage in variety-seeking behavior

(Roth 1995) and try new products or brands (Steenkamp, Ter Hofstede, and Wedel 1999).

Thus, consumers in low UA cultures would comply with a recovery message that emphasizes the gains associated with prompt action (i.e., safety). Accordingly, we posit that:

*H<sub>1a</sub>: A post-failure recovery message with prevention focus achieves higher consumer compliance when national culture has high (vs low) uncertainty avoidance.*

*H<sub>1b</sub>: A post-failure recovery message with a promotion focus achieves higher consumer compliance when the national culture has low (vs high) uncertainty avoidance.*

### **Goal Compatibility as the Mechanism behind the Effectiveness of the Interaction Effect**

Goal compatibility is the “extent to which the goals or objectives of one party are similar to and coincide with the goals and objectives of another party” (Werder 2005, p. 277). Research has established that individuals focus more on goal-relevant information (Markman and Brendl 2000) and assign more value to objects if they fit their regulatory focus (Higgins et al. 2003). More specifically, research on regulatory relevance highlights that messages that are compatible (vs. those that are incompatible) with an individual’s regulatory focus are more persuasive (Aaker and Lee 2001; Lee and Aaker 2004; Zhao and Pechmann 2007) and boost the individual’s motivational intensity (Forster et al. 2001) and willingness to pay for the product (Avnet and Higgins 2003). For example, Ramanathan and Dhar (2010) found that the compatibility of marketing messages with consumers’ pre-existing motivation affects their buying behavior. Similarly, Labroo and Lee (2006) argued that consumers’ product evaluations are influenced by goal compatibility: goal compatibility increases (decreases) individuals’ attention to information that matches (conflicts with) their goal. Because individuals pay attention to information that is compatible with their goals, we propose that the fit between one’s goal (prevention of harm or promotion of safety) helps us understand consumer compliance with the company’s recovery message following a liability-invoking failure.

More specifically, we propose that matching the regulatory focus (i.e., prevention vs. promotion) of the recovery message with the level of UA (high vs. low) of a consumer's national culture boosts compliance. The tendency of individuals in high-UA cultures to prefer predictable rules is consistent with prevention focus (i.e., the focus to approach safety and avoid danger; Crowe and Higgins 1997; Higgins 1997). Therefore, because a prevention-focused recovery message is compatible with a consumer's high-UA culture, the consumer will pay more attention to it. Building on the work of Ramanathan and Dhar (2010) and Aaker and Lee (2001), because goal compatibility influences consumer behavior and leads to higher message persuasiveness, we posit that it would have a positive influence on compliance too. More specifically, as consumers pay more attention to information compatible with their goals, they are more likely to be persuaded by the information, leading to greater compliance.

Low UA individuals may resist messages that focus on harm prevention and favor messages that focus on promoting benefits (as opposed to costs). Because harm prevention is not compatible with the goals of low UA individuals, they may pay less attention to those goals. Consequently, low UA individuals may pay more attention to messages that focus on benefit promotion because achieving gains is more compatible with their goal of promotion focus.

Thus, we hypothesize that:

*H<sub>2</sub>: Goal compatibility between the goal (prevention vs promotion) and the UA dimension of the national culture mediates the effect on consumer compliance.*

## **OVERVIEW OF STUDIES**

We conducted two studies across four different countries to test our hypotheses. Study 1 examines regulatory focus in the context of car recall notices. We recruited the employees of two automobile companies, one located in the United Kingdom (national culture with low UA) and the other in Hungary (national culture with high UA) as participants. Table 2 reports

how these two countries compare on various dimensions of national culture. Study 1 sought answer to our research question and tested our interaction-effects hypotheses ( $H_{1a}$ , and  $H_{1b}$ ). Study 2 used the context of a data breach at a financial bank. We recruited graduate students from two Asian countries: China (low UA) and South Korea (high UA) (Table 2). Study 2 replicated Study 1's findings and tested the mediation hypothesis ( $H_2$ ). Table W1 in the Web Appendix defines the key theoretical terms and constructs used, while Table W2 elaborates on the complementarity

[Insert Table 2 about here.]

## **STUDY 1: PRODUCT RECALL NOTICE**

### **Design and Procedure**

Study 1 uses notice of a car safety recall as a stimulus. We invited 700 employees from two car companies: one located in the United Kingdom (low UA; 350 employees) and the other in Hungary (high UA; 350 employees) (Table 2). Participants included 218 employees, of which 15 participants failed the attention check (by agreeing to the “I am a robot” statement). Thus, the final sample size comprised 203 participants who worked and lived in the UK ( $N_{UK} = 104$ ) and Hungary ( $N_{Hungary} = 99$ ) for a response rate of 29.71% and 28.29% for the UK and Hungary, respectively. Participants were in the age groups 25-34 years (17.7%), 35-44 years (31.5%), and 45-54 years (35.5%); 34% of the participants were female.

We assigned participants to either of two conditions (promotion vs prevention focus in the recall notice) and employed a 2 (promotion vs prevention focus in the recall notice)  $\times$  2 (low vs high UA culture) between-participant design (see Web Appendix for the two vignettes). Next, participants responded to a set of items that measured all constructs of our interest (Table 3). Lastly, each participant received organic, vegan chocolate worth U.S. \$18

and was debriefed. During the debriefing, we informed the participants that the recall notice was fictitious.

[Insert Table 3 about here.]

## Measures

*Dependent Variables (DVs).* The main DV was the likelihood of agreeing to the advice given and willingness to schedule an appointment with the car dealership (5-items) (e.g., “I will act on the given advice,” “I am not interested in scheduling an appointment with the dealership” [reverse coded]).

*Manipulation Checks.* For UA, participants indicated the extent to which they agreed with “I prefer structured situations to unstructured situations,” “I tend to get anxious easily when I don’t know an outcome,” and “I don’t like ambiguous situations.” For promotion focus, the items included “To what extent did you focus on gaining a fast resolution?” and “To what extent did you focus on the promotion of the safety and well-being of you?” 1 = “Not at all,” 7 = “A lot.” For prevention focus, the items included “To what extent did you focus on avoiding any injury?” and “To what extent did you focus on avoiding any property damage?” 1 = “Not at all,” 7 = “A lot.”

*Control Variables.* Lastly, we accounted for several potential confounds, including individualism, long-term orientation, masculinity, power distance, familiarity with product recalls, attitude toward the focal company, manipulation believability and self-relevance, a concern of being at risk due to faulty vehicles, the likelihood of being affected by product recall one day, guess study purpose, car ownership, frequency of driving, age, and gender. The controls did not impact the reported results; thus, we do not discuss them further.

We tested our scales for four types of measurement invariances—configural, metric, scalar, and strict—using statistical insignificance of the changes in chi-square statistic, comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of

approximation (RMSEA) as evidence for invariance. We found that our scales meet all four types of invariances.

## Results

Table 4 reports the cell means, while Table W3 (in the Web Appendix) reports the descriptive statistics and correlation coefficients for all measures.

[Insert Table 4 about here.]

The manipulation check for promotion vs prevention focus showed only the main effect of promotion and prevention focus. As we expected, participants in the promotion condition viewed the notice as having a stronger promotion focus ( $M_{\text{promotion focus} | \text{promotion condition}} = 4.84$ ) than those in the prevention condition ( $M_{\text{promotion focus} | \text{prevention condition}} = 2.85$ ;  $F(1, 203) = 84.08, p < .001$ ). Likewise, participants in the prevention condition indicated the notice as having a stronger prevention focus ( $M_{\text{prevention focus} | \text{prevention condition}} = 4.82$ ) than participants in the promotion condition ( $M_{\text{prevention focus, promotion condition}} = 3.03$ ;  $F(1, 203) = 71.11, p < .001$ ). None of the other effects was statistically significant.

Moreover, the manipulation of UA worked as expected, revealing only the main effect of UA. Specifically, participants from the UK reported lower levels of UA ( $M_{\text{uncertainty avoidance} | \text{UK}} = 2.81$ ) than those from Hungary ( $M_{\text{uncertainty avoidance} | \text{Hungary}} = 4.87$ ;  $F(1, 203) = 160.55, p < .001$ ). None of the other effects was significant.

A 2×2 ANOVA with participants' willingness to comply and follow the given advice to schedule an appointment as the DV revealed a main effect of prevention focus ( $M_{\text{prevention focus}} = 3.46$  vs  $M_{\text{promotion focus}} = 2.77$ ,  $F(1, 203) = 16.12, p < .001$ ), showing that a prevention-focused message achieves higher compliance than a promotion-focused message.

Further, the results support the predicted interaction between promotion and prevention focus and low and high UA ( $F(1, 203) = 83.83, p < .001$ ). In support of  $H_{1a}$ , when the national culture is characterized by high UA, a prevention-focused notice elicits stronger compliance



( $M_{\text{willingness to comply}} | \text{prevention-focused notice, high uncertainty avoidance} = 4.39$ ) than a notice with a promotion focus ( $M_{\text{willingness to comply}} | \text{promotion-focused notice, high uncertainty avoidance} = 2.10$ ;  $t(97) = 9.12$ ,  $p < .001$ ). Supporting H<sub>1b</sub>, when the national culture has low UA, a post-failure recall message with a promotion focus elicits stronger compliance ( $M_{\text{willingness to comply}} | \text{promotion-focused notice, low uncertainty avoidance} = 3.43$ ) than a message with prevention focus ( $M_{\text{willingness to comply}} | \text{prevention-focused notice, low uncertainty avoidance} = 2.54$ ;  $t(102) = 3.71$ ,  $p < .001$ ). We observed no main effect of UA ( $F(1, 203) = 2.24$ ,  $p = .136$ ) (Figure 2).

[Insert Figure 2 about here.]

## Discussion

Study 1 demonstrates that a prevention-focused message achieves higher compliance than a promotion-focused message. Therefore, individuals are more likely to comply with a message that focuses on the problem and costs of not complying (i.e., prevention focus), rather than the solution and the benefits of complying (i.e., promotion focus). We, thus, address the empirical dilemma on whether prevention- or promotion-focused messages elicit more favorable responses, and consequently, encourage consumer compliance. While prior research has documented the asymmetric effects of promotion-and prevention-focused framing purchase intention and consumer evaluations of products (Lee et al. 2021; Micu 2010), we extend it to the more consequential outcome of compliance. Further, Study 1 shows that compliance is stronger when the messenger (the recalling company or the regulatory agency) matches a high-UA culture with a prevention-focused message and a low UA culture with a promotion-focused message, supporting H<sub>1a</sub> and H<sub>1b</sub>. We therefore find evidence that the effectiveness of prevention- vs promotion-focused messages is contingent on the UA dimension of the national culture.

While the findings in Study 1 are insightful, one might wonder whether the effects replicate with the liability-invoking failure that causes psychological (as opposed to bodily)

harm, such as the potential theft of identity caused by a data breach. Even though the participants of Study 1 offered their insights as consumers (owners of vehicles) rather than employees of a car manufacturing company, one might wonder whether the effects replicate for consumers in a different context. Moreover, one wonders whether the effects replicate with a younger population, another dependent variable, and participants from non-European countries. In addition, one might wish to understand the process mechanism behind the interaction effect driving consumer compliance. Goal compatibility increases (decreases) individuals' attention to information that matches (conflicts with) their goal. To unpack the underlying mechanism behind the effectiveness of prevention- vs promotion-focused messages and their contingency on the UA dimension of the national culture, Study 2 looks at the goal compatibility (or fit) between the goal (prevention vs promotion) and the UA dimension of the national culture.

## **STUDY 2: DATA BREACH NOTICE**

### **Design and Procedure**

One hundred and sixty-four graduate students living in South Korea (whose national culture rates high on UA) and China (whose culture rates low on UA) participated in Study 2 (Table 2). All participants possessed and used a bank account. The South Korean participants were recruited from a university in South Korea and participants from China were recruited from a university located in China in the Master of Science program.

Eleven participants failed the attention check question (agreeing with the “I am a robot” item). Thus, the final sample comprised 153 participants ( $N_{\text{South Korea}} = 78$ ,  $N_{\text{China}} = 75$ ; 50.3% female). Participants were 18-24 years (77.8%) and 25-34 years (22.2%). As in Study 1, we randomly assigned participants to either of the two conditions (promotion vs prevention focus in the data breach notice) (see Web Appendix for the two vignettes). We employed a 2 (promotion vs prevention focus in the recall notice message)  $\times$  2 (low vs high UA culture)

between-participant design. Next, participants responded to a set of items that measured all constructs of our interest. To encourage enrolment in the experiment, we paid each participant an equivalent of U.S. \$15. Lastly, we debriefed the participants and informed them that the data breach notice was fictitious.

## Measures

Study 2 used Study 1's measures adapted to the context of the data breach (Table W4 in the Web Appendix lists the items for each measure). In addition to the DV of the participant's willingness to follow the suggested advice (in Study 1), Study 2 included another DV that captured the *timeliness* of the participant's compliance with the recommended service "When would you consider signing up for the free identity protection service?" 1 = "Never," 7 = "Immediately." Further, we included items to measure goal compatibility as a mediator "Weston Bank's initiative to prevent my identity theft (protect my identity) is important to me," "Weston Bank and I want to prevent my identity theft (protect my identity)," "I support the goal of preventing my identity theft (protect my identity)" 1 = "Not at all," 7 = "Very much." As in Study 1, we accounted for various control variables. The controls did not influence the results, and thus we do not discuss them further.

## Results

Table 5 reports the cell means, while Table W5 (in the Web Appendix) reports the descriptive statistics and correlation coefficients for all measures.

[Insert Table 5 about here.]

A set of 2 (promotion vs prevention focus in the data breach message)  $\times$  2 (low vs high UA culture) ANOVAs on manipulation checks demonstrated that the manipulations were successful. The manipulation check for promotion vs prevention focus showed only the main effect of promotion and prevention. Participants in the promotion condition viewed the notice as having a stronger promotion focus ( $M_{\text{promotion focus} | \text{promotion condition}} = 4.15$ ) than did

participants in the prevention condition ( $M_{\text{promotion focus} | \text{prevention condition}} = 2.72$ ;  $F(1, 153) = 38.98$ ,  $p < .001$ ). Participants in the prevention condition indicated that they had a stronger prevention focus ( $M_{\text{prevention focus} | \text{prevention condition}} = 4.63$ ) than participants in the promotion condition ( $M_{\text{prevention focus} | \text{promotion condition}} = 2.95$ ;  $F(1, 153) = 48.05$ ,  $p < .001$ ). No other effects were significant. The manipulation of UA worked as predicted, revealing only its main effect. Specifically, participants from China reported lower levels of UA ( $M_{\text{uncertainty avoidance} | \text{China}} = 3.04$ ) than participants from South Korea ( $M_{\text{uncertainty avoidance} | \text{South Korea}} = 4.84$ ;  $F(1, 153) = 88.17$ ,  $p < .001$ ). No other effects were significant.

Replicating Study 1 and confirming that a prevention-focused message achieves higher compliance than a promotion-focused message, a  $2 \times 2$  ANOVA with participants' willingness to adopt the recommended protection service as the DV revealed a main effect of prevention focus ( $M_{\text{willingness to adopt} | \text{prevention-focused notice}} = 4.13$  vs  $M_{\text{willingness to adopt} | \text{promotion-focused notice}} = 3.36$ ;  $F(1, 153) = 18.44$ ,  $p < .001$ ).

The results supported the predicted interaction between promotion vs prevention focus and UA ( $F(1, 153) = 147.84$ ,  $p < .001$ ). Specifically, and in support of  $H_{1a}$ , the prevention focus notice had a stronger effect on participants' willingness to adopt the suggested identity protection service ( $M_{\text{willingness to adopt} | \text{prevention-focused notice}} = 5.32$ ) than the notice with a promotion focus ( $M_{\text{willingness to adopt} | \text{promotion-focused notice}} = 2.35$ ;  $t(76) = 11.78$ ,  $p < .001$ ) when the national culture was characterized by high UA. In support of  $H_{1b}$ , a post-failure message with a promotion (willingness to adopt | promotion-focused notice, low uncertainty avoidance = 4.36) vs prevention (willingness to adopt | promotion-focus notice, low uncertainty avoidance = 2.94;  $t(73) = 5.49$ ,  $p < .001$ ) focus achieved higher consumer compliance when the national culture had low UA. The results showed no main effect of UA ( $F(1, 153) = 1.03$ ,  $p = .311$ ).

These results replicated with the *timeliness of adoption* as the DV. A  $2 \times 2$  ANOVA demonstrated a main effect of prevention focus ( $M_{\text{timeliness of adoption} | \text{prevention-focused notice}} = 4.17$

vs  $M_{\text{timeliness of adoption} | \text{promotion-focused notice}} = 3.39$ ;  $F(1, 153) = 9.42, p = .003$ ). In addition, the results supported the predicted interaction between promotion vs prevention focus and UA ( $F(1, 153) = 103.40, p < .001$ ). In support of H<sub>1a</sub>, the prevention focus notice had a stronger effect on participants' timeliness of adoption with the suggested protection service ( $M_{\text{timeliness of adoption} | \text{prevention-focused notice}} = 5.68$ ) than the notice with a promotion focus ( $M_{\text{timeliness of adoption} | \text{promotion-focused notice}} = 2.33$ ;  $t(76) = 9.56, p < .001$ ) when the national culture had high UA. In support of H<sub>1b</sub>, a post-failure message with a promotion ( $M_{\text{timeliness of adoption} | \text{promotion-focused notice}} = 4.46$ ) vs prevention ( $M_{\text{timeliness of adoption} | \text{prevention-focused notice}} = 2.66$ ;  $t(73) = 4.92, p < .001$ ) focus achieved higher consumer willingness to adopt the recommended protection service when the national culture is characterized with low UA. The results showed no significant main effect of UA ( $F(1, 153) = 3.00, p = .081$ ). Together, these results show that a prevention-focused message achieves higher compliance than a promotion-focused message, as well as H<sub>1a</sub>-H<sub>1b</sub> (Figure 3).

[Insert Figure 3 about here.]

To test whether UA interacts with the promotion vs prevention focus of the safety notice, which, in turn, affects goal compatibility and consumer willingness to adopt the recommended protection service, we used bootstrapping with repeated extraction of 5,000 samples (Hayes 2017, PROCESS v3.4 model 8). Specifically, the moderated mediation analysis included goal compatibility as a mediator of the relationship between promotion vs prevention, UA, and consumer willingness to adopt.

The results support H<sub>2</sub>; specifically, the interaction between promotion vs prevention and UA predicted goal compatibility ( $\beta = -4.46, p < .001$ ). Promotion vs prevention focus ( $\beta = -.24, p = .284$ ) and UA ( $\beta = .24, p = .282$ ) had no significant main effect on goal compatibility. Further, goal compatibility influenced willingness to adopt ( $\beta = .36, p < .001$ ). The results also showed a direct main effect of promotion vs prevention ( $\beta = -.73, p < .001$ ).

and a predicted interaction between promotion vs prevention  $\times$  UA ( $\beta = -2.78, p < .001$ ) on willingness to adopt, suggesting that alternative mediators are operative. No direct effect was observed for UA on the willingness to adopt ( $\beta = .08, p = .611$ ). The results remain unchanged upon inclusion of the control variables.

These results were replicated when the consumer timeliness of adoption was used as the DV. That is, promotion vs prevention focus  $\times$  UA impacted goal compatibility ( $\beta = -4.46, p < .001$ ), which, in turn, influenced how fast consumers were willing to adopt the protection service ( $\beta = .35, p < .001$ ). Neither promotion nor prevention ( $\beta = -.24, p = .284$ ) nor UA ( $\beta = .24, p = .282$ ) affected on goal compatibility. The results also showed a significant direct effect of promotion vs prevention  $\times$  UA on the timeliness of adoption ( $\beta = -3.60, p < .001$ ) and a significant direct effect of promotion vs prevention ( $\beta = -.75, p = .003$ ), indicating that alternative mediators are operative. The results showed no direct effect of UA on timeliness of adoption ( $\beta = .35, p = .157$ ).

## **Discussion**

Study 2 provided further evidence that a prevention-focused data breach notice achieves higher compliance than a promotion-focused message. Further, a prevention-focused notice earns greater compliance when used in high-UA cultures (supporting H<sub>1a</sub>), whereas a promotion-focused notice elicits higher compliance in low UA cultures (supporting H<sub>1b</sub>). Importantly, Study 2 extends Study 1 by using younger participants, a different phenomenon for service failure (i.e., data breach), an additional DV (timeliness of adoption), and different countries (China or South Korea vs UK or Hungary in Study 1). In addition to this, Study 2 provides evidence of the underlying process by highlighting the mediating role of goal compatibility. More specifically, Study 2 shows that high-UA cultures prefer a recovery message that reduces ambiguity and rebuilds structure by communicating the hazard clearly. In contrast, people in low-UA cultures resist messages that focus on harm prevention and

favor messages that focus on benefit promotion, as the latter is more compatible with their goals.

## **GENERAL DISCUSSION**

This is the first study to offer theory-based actionable insights into how international companies and regulators can achieve higher compliance from affected consumers (Cleeren, Dekimpe, and van Heerde 2017). In doing so, our findings have implications for both theory and practice.

### **Theoretical Implications**

In considering product safety incidents and data breaches as liability-invoking failures, we contribute to the literature on product-harm crises and data breaches. These streams have focused on the impact of such crises or failures on company outcomes in the product and financial markets (Cleeren, Dekimpe, and Helsen 2008; Liu et al. 2012; Liu and Shankar 2015;). We extend this literature by considering consumer compliance as a performance outcome (Cleeren, Dekimpe, and van Heerde 2017; Pagiavlas et al. 2021). This consideration reminds researchers that a product recall and a data breach announcement are a means to an end, and the end is to protect the safety and identity of the affected consumers.

Further, we contribute to the emerging literature on regulatory focus theory in an international marketing context (e.g., Kumar et al. 2021; Westjohn et al. 2016). Our contribution lies in linking regulatory focus with message framing (e.g., Lee et al. 2021; Micu 2010). We reason that a product recall notice or a data breach notice can emphasize either preventing harm (i.e., prevention focus) or promoting safety (i.e., promotion focus) (Higgins 1997). Although, on average, a prevention-focused message achieve higher compliance than its promotion-focused counterpart, the effect is contingent on the level of uncertainty avoidance in the consumers' national culture.

We also contribute by showing a mechanism that explains how regulatory focus and uncertainty avoidance interact to impact compliance. More specifically, we build on Labroo and Lee's (2006) and Ramanathan and Dhar's (2010) research to reason that compatibility between the goal (prevention vs promotion) and the UA dimension of the national culture mediates the effect on consumer compliance. Individuals in high-UA cultures prefer predictable rules and circumstances, and their actions thus serve to prevent harm rather than promoting safety. Conversely, low UA cultures value unplanned settings. Individuals in these countries resist messages if they do not align with their goals. Thus, our work establishes the role of regulatory focus theory and national culture on consumer compliance.

### **Managerial Implications**

When companies and regulators achieve high consumer compliance with post-failure recovery messages, they receive unprecedented acclaim. For example, when Volvo received compliance from 100% of its affected customers, Volvo, the U.S. Department of Transportation, and the two regulators issued a press release and posted their success on social media platforms, emphasizing on how rare and difficult their collective achievement was (NHTSA 2016). Conversely, low consumer compliance has led journalists to label regulators as failures (Ivory 2015) and accuse companies of malice in responding to product safety incidents (Beresford 2021; Consumer Reports 2010). In response to low consumer compliance, on December 4, 2015, U.S. President Barack Obama signed into law the FAST Act, which compels the NHTSA “to assess potential *actions* ... to improve automobile safety recall completion” (U.S. Government Publishing Office 2015; italics added for emphasis). Our findings directly contribute to this law. In showing that the framing of a recovery message can influence consumer compliance, we offer a method of analyzing such “actions” that the FAST Act seeks.



Since 2016, car manufacturers have been holding discussions in the months of May and November every year to understand how they can elicit greater compliance from the affected customers (Fiat Chrysler Automobiles 2016). Similarly, technology and security managers have lamented the lack of guidance on making consumers act on recall notices (Ablon et al. 2016; Ponemon Institute 2012, 2014). These managers can use our findings to design recovery messages to achieve higher consumer compliance. Higher compliance would lower the company's exposure to liability claims, demonstrate accountability toward the safety of their offerings, and practice responsibility with regard to consumer safety. The U.S. Congress asks the NHTSA to submit biennial reports on the consumer compliance rate with recall notices (NHTSA 2018). Similarly, the U.S. Department of Justice produces biennial reports on consumer responses to data breaches (U.S. Department of Justice 2018). While this descriptive evidence is useful, it is less actionable because it does not help solve the problem of low consumer compliance with recall and breach discoveries.

Lawmakers, the judiciary, and the regulators can use our findings to help organizations design more effective messages and achieve outcomes that serve all stakeholders. Journalists, safety advocates, and liability lawyers can analyze organizational messages and hold them accountable for alleged ambiguities and obfuscation (Consumer Reports 2015; Doering 2012; Flynn 2021; Spiggle 2021; Zou et al. 2019). Our findings also have important managerial implications for drafting compliance messages. Implementing prevention-focused wording in compliance messages could ensure higher compliance. More specifically, highlighting the importance of risk reduction arising from failure can prompt higher compliance than customer safety and well-being. Nevertheless, managers should also consider the national culture when drafting post-failure messages.

## **Limitations and Future Research**

The current study offers provocative and important insights that can be extended in several critical ways. First, the extant practice of recall or breach notices varies between countries but does not vary between the affected customers in a country. Therefore, we consider UA as a country-level variable. Should companies use personalized messages for affected customers within a country, future research may operationalize UA as an individual difference and explore the fit of prevention (vs promotion) messages with this difference.

Second, we focus on the failures for which the law requires the company to message the affected consumers, and a regulator monitors the effectiveness of such a message. However, our hypotheses apply to other failures where the company may voluntarily notify consumers of a failure and persuade them to avail the offered remedy. Future research may consider companies' volitional (as opposed to legally mandated) messages to consumers as their attempt to recover from a nonliability-invoking failure (Astvansh, Ball, and Josefy 2022).

Third, because participants in Study 1 were employees of a car manufacturing company, it may be the case that they possess greater expertise in the automotive industry overall. We invite future research to test the observed effect using different participant samples and across different industry contexts for greater confidence in the generalizability of the findings.

Fourth, while the NHTSA provides data on car recalls (from which one can measure regulatory focus) and the percentage of affected vehicles whose owners availed free repair, such data are unavailable in any other country. Consequently, we could not compare the car recall repair rates in the United States and any country that rates high on UA. As data on recall notices and consumer compliance with these notices become available from other countries, future research may test our hypotheses and offer evidence from the field.

Fifth, we view the recovery messages from the perspective of regulatory focus. Future research should consider other theoretical perspectives. For example, do car companies use an apology statement in its car recall notice to increase consumer compliance? If yes, is the specification of the statement moderated? For example, a company can apologize for a safety defect, or the inconvenience caused to the affected consumer. While the former may appear sincere, it can establish the company's culpability in a liability lawsuit. In contrast, an apology for inconvenience is ceremonial and may not matter to consumers. Similarly, one could analyze whether user-generated content in the wake of liability-invoking failures (Astvansh, Wang, and Shi 2022) varies across countries.

In summary, we believe our research takes international marketing research in a new and consequential territory, while offering avenues for future advancements.

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**TABLE 1. REVIEW OF RELEVANT LITERATURE ON UNCERTAINTY AVOIDANCE AND REGULATORY FOCUS THEORY  
IN THE INTERNATIONAL MARKETING CONTEXT**

Citation	Studies Post-failure Recovery?	Findings	Focal Independent Variables		Focal Dependent Variables	Cultural Dimensions	Method	Research gaps
			Regulatory Focus	Culture				
Lee, Aaker, and Gardner (2000)	No	Individuals with a dominant independent self-construal value promotion-focused information, while those with a dominant interdependent self-construal focus more on prevention-focused information. Results are contingent on Western vs. Eastern culture.	Yes	Yes	Information importance	Cultures with dominant interdependent and independent self	Lab experiments	Does UA moderate the relationship between regulatory focus and consumer compliance?
Elliot et al. (2001)	No	Collectivist cultures exhibit higher avoidance than individualists	Yes	Yes	Approach and avoidance goals	Individualism	Lab experiments	Does regulatory focus influence consumer compliance across national cultures?
Aaker and Lee (2001)	No	The compatibility of persuasive appeal and self-regulatory focus leads to greater message recall	Yes	Yes	Message recall	North American and East Asian culture	Lab experiment	Does goal compatibility between regulatory focus and national culture influence consumer compliance?
Briley and Aaker (2006)	No	North Americans are persuaded more by promotion-focused information, and Chinese people are persuaded more by prevention-focused information	Yes	Yes	Attitude towards ad	Culture-based difference in persuasion	Lab experiment	Does promotion- or prevention-focused message elicit higher compliance across national cultures?
Lalwani, Shrum, and Chiu (2009)	No	Promotion focus mediates the relation between individualism and self-deceptive enhancement, whereas a prevention focus mediates the relation between	Yes	Yes	Self-deceptive enhancement and	Individualism	Lab experiment	Does regulatory focus and national culture influence consumer compliance?

		collectivism and impression management			impression management			
Kurman et al. (2014)	No	Regulatory focus explains the cross-cultural differences in actual and self-reported achievement-related behavior	Yes	Yes	Actual and self-reported achievement-related behavior	Individualism	Lab experiment	Does regulatory focus explain the effective of recall announcements across national cultures?
Petersen, Kushwaha, and Kumar (2015)	No	National culture affects consumer financial decision making and moderates the impact of marketing efforts of financial services companies	Yes	Yes	Consumer financial decision making	Long-term orientation, UA, masculinity	Time-series data	Does regulatory focus and national culture influence consumer compliance?
Westjohn et al. (2016)	No	Promotion focus is positively related to global consumption orientation, while prevention focus is negatively related to global consumption orientation	Yes	Yes	Consumer responses to consumer culture positioning	Global consumption orientation	Field study and lab experiments	Does regulatory focus influence consumer compliance across national cultures?
Alhouti, Wright, and Baker (2019)	Yes	Prevention framing the donation message leads to better service recovery outcome compared to promotion framing the donation message	Yes	No	Service recovery outcome	No	Lab experiment	Does regulatory focus of message framing influence consumer compliance with recall announcements?
Kim and Park (2019)	No	When a brand extension is psychologically distant and construed at an abstract level, Asians' prevention focus leads them to perceive it as risky and evaluate it less favorably than Westerners	Yes	Yes	Evaluation of brand extensions	Cultural differences in thinking style	Lab experiment	Does regulatory focus influence consumer compliance across national cultures?
Cummings and Yule (2020)	Yes	Emotion-focused recovery message emphasizing empathy works for consumers in avoidance affective state, while a problem-focused recovery works for consumer in approach state	Yes	No	Evaluations and behavioral intention	No	Field and lab experiment	Does regulatory focus influence consumer compliance with recall announcements?

Kumar et al. (2021)	No	Prevention-focused interventions curb disease incidence, while promotion-focused interventions increase the nation's ability to slow the spread of virus.	Yes	Yes	Disease incidence	Country clusters	Time-series data	Does regulatory focus influence consumer compliance across national cultures?
Silbiger et al. (2021)	No	Promotion-focused expatriates manage interaction adjustment better than prevention-focused expatriate managers	Yes	Yes	Adjustment	Cultural distance	Survey	Does regulatory focus and national culture influence consumer compliance?



<b>This Paper - Research questions</b>
Does regulatory focus influence consumer compliance in the context of recall announcements?
Is the influence of regulatory focus on consumer compliance contingent on national culture?
Does the compatibility between the goal (prevention vs promotion focus) and national culture explain the process behind the effect?

**TABLE 2. SAMPLED COUNTRIES AND THEIR HOFSTEDE SCORES**

<b>Study ID</b>	<b>Countries</b>	<b>Score</b>	<b>Uncertainty Avoidance</b>	<b>Power Distance</b>	<b>Individualism</b>	<b>Long-term Orientation</b>	<b>Masculinity</b>
<b>1</b>	United Kingdom	Hofstede	35	35	89	51	66
	Hungary	Hofstede	82	46	80	58	88
<b>2</b>	China	Hofstede	30	80	20	87	66
	South Korea	Hofstede	85	60	18	100	39



**TABLE 3. STUDY 1: CONSTRUCTS, ITEMS, SCALE RELIABILITIES, AND DESCRIPTIVE STATISTICS**

Items ( <i>1 = not at all; strongly disagree, 7 = very much; strongly agree</i> )	Reliabilities	Mean	SD	Min	Max
<b>Follow recall advice</b>	<i>r</i> = .86	3.11	1.51	1	7
How likely are you to act on the given advice?		3.04	1.79	1	7
How likely are you to schedule an appointment with the dealership for repair?		3.13	1.93	1	7
I will act on the given advice.		3.06	1.91	1	7
I will not follow the advice given to me. (R)		3.11	1.85	1	7
I will not follow the advice given to me. (R)		3.11	1.85	1	7
I am not interested in scheduling an appointment with the dealership. (R)		3.20	1.87	1	7
<b>Promotion focus</b>	<i>r</i> = .70	3.86	1.84	1	7
To what extent did you focus on gaining a fast resolution?		3.99	1.98	1	7
To what extent did you focus on the promotion of the safety and well-being of you?		3.73	2.01	1	7
<b>Prevention focus</b>	<i>r</i> = .63	3.91	1.75	1	7
To what extent did you focus on avoiding any injury?		3.96	1.97	1	7
To what extent did you focus on avoiding any property damage?		3.86	1.90	1	7
<b>Uncertainty avoidance</b>	<i>r</i> = .78	3.82	1.55	1	7
I prefer structured situations to unstructured situations.		3.74	2.12	1	7
I prefer specific instructions to broad guidelines.		3.74	2.05	1	7
I tend to get anxious easily when I don't know an outcome.		3.72	2.07	1	7
I feel stressed when I cannot predict consequences.		3.90	2.16	1	7
I don't like ambiguous situations.		3.98	2.20	1	7
<b>Individualism</b>	<i>α</i> = .54	5.28	1.01	1	7
I'd rather depend on myself than others.		5.46	1.33	1	7
I rely on myself most of the time; I rarely rely on others.		5.18	1.46	1	7
My personal identity, independent of others, is very important to me.		5.21	1.41	1	7
<b>Long-term orientation</b>	<i>r</i> = .76	3.25	1.14	1	7
I plan for the long-term.		3.25	1.42	1	7
I work hard toward success in the future.		3.23	1.35	1	7
I don't mind giving up today's fun for success in the future.		3.26	1.39	1	7
<b>Power distance</b>	<i>r</i> = .70	2.40	.94	1	7
A person's social status reflects his or her place in society.		2.65	1.34	1	7
It is important for everyone to know their rightful place in society.		2.39	1.45	1	7
It is difficult to interact with people from different social statuses than mine.		2.30	1.29	1	7
Unequal treatment for different people is an acceptable way of life for me.		2.31	1.37	1	7
I believe some people have an advantage over others in every society.		2.34	1.45	1	7
<b>Masculinity (1 = masculine, 7 = feminine)</b>	<i>r</i> = .74	4.06	1.26	1	7
I FEEL as though I am...		4.02	1.73	1	7
I LOOK as though I am...		4.34	1.67	1	7
I DO most things in a manner typical of someone who is ...		3.95	1.61	1	7
My INTERESTS are mostly of a person who is...		3.91	1.68	1	7

Items ( <i>1 = not at all; strongly disagree, 7 = very much; strongly agree</i> )	Reliabilities	Mean	SD	Min	Max
<b>Familiarity with product recall:</b> How familiar are you with product recalls?		2.34	1.49	1	7
<b>Notice believability:</b> How believable is the notice about a product recall?		4.56	1.82	1	7
<b>Notice relevance:</b> How relevant is the notice about a product recall to you?		2.72	1.59	1	7
<b>Concern of faulty vehicle</b>	$\alpha = .48$	4.09	1.67	1	7
To what extent are you concerned that a faulty vehicle places one at risk?		4.25	1.86	1	7
To what extent do you think that a faulty vehicle places one at risk?		3.93	2.02	1	7
<b>Risk of recall:</b> How likely do you think of being at risk of a defective vehicle someday?		3.25	1.75	1	7
<b>Attitude toward focal firm (1 = something I ought to, 7 = something I want to)</b>	$r = .85$	3.77	1.69	1	7
How would you rate your attitude toward Weston Motors? Negative–Positive		3.77	1.97	1	7
Unfavorable–Favorable		3.71	1.92	1	7
Bad–Good		3.81	1.91	1	7
<b>Promotion versus prevention focus of the individual</b>	$r = .75$	4.09	1.63	1	7
What is more important to you to do?		4.01	1.99	1	7
What is less critical for you? (R)		3.97	1.98	1	7
What do you think about more often?		3.96	1.98	1	7
<b>Car ownership (0 = no, 1 = yes)</b>		.94	.236	0	1
<b>Driving frequency</b> (1 = very infrequently, 2 = somewhat infrequently, 3 = occasionally, 4 = somewhat frequently, 5 = very frequently)		4.17	1.95	1	5
<b>Gender</b> (0 = male, 1 = female)		.34	.48	0	1
<b>Age</b>		3.42	1.02	1	6

**TABLE 4. STUDY 1: CELL MEANS**

Product Recall Context	National Culture (Hungary) High Uncertainty Avoidance		National Culture (UK) Low Uncertainty Avoidance	
	Recall prevention focus	Recall promotion focus	Recall prevention focus	Recall promotion focus
N=203	N=49	N=50	N=51	N=53
<i>Manipulation Checks</i>				
Uncertainty avoidance ( $\alpha=.78$ )	4.85 <sup>a</sup>	4.90 <sup>a</sup>	2.71 <sup>b</sup>	2.90 <sup>b</sup>
Promotion focus ( $r=.70$ )	3.02 <sup>b</sup>	4.74 <sup>a</sup>	2.68 <sup>b</sup>	4.94 <sup>a</sup>
Prevention focus ( $r=.63$ )	4.76 <sup>a</sup>	3.01 <sup>b</sup>	4.88 <sup>a</sup>	3.05 <sup>b</sup>
<i>DVs</i>				
Follow recall advice ( $\alpha=.86$ )	4.39 <sup>a</sup>	2.10 <sup>d</sup>	2.54 <sup>c</sup>	3.43 <sup>b</sup>
<i>Controls</i>				
Familiarity with product recall	2.29 <sup>a</sup>	2.34 <sup>a</sup>	2.31 <sup>a</sup>	2.43 <sup>a</sup>
Notice believability	4.51 <sup>a</sup>	4.74 <sup>a</sup>	4.57 <sup>a</sup>	4.43 <sup>a</sup>
Notice relevance	2.57 <sup>a</sup>	2.64 <sup>a</sup>	2.76 <sup>a</sup>	2.91 <sup>a</sup>
Concern of faulty vehicle ( $r=.48$ )	4.15 <sup>a</sup>	3.99 <sup>a</sup>	4.25 <sup>a</sup>	3.96 <sup>a</sup>
Risk of recall	3.39 <sup>a</sup>	3.30 <sup>a</sup>	3.06 <sup>a</sup>	3.25 <sup>a</sup>
Attitude toward focal firm ( $\alpha=.85$ )	4.36 <sup>a</sup>	3.73 <sup>ab</sup>	3.33 <sup>b</sup>	3.67 <sup>b</sup>
Promotion versus prevention focus of the individual ( $\alpha=.75$ )	3.75 <sup>a</sup>	3.95 <sup>a</sup>	4.37 <sup>a</sup>	4.29 <sup>a</sup>
Car ownership (0=no, 1=yes)	.96 <sup>a</sup>	.96 <sup>a</sup>	.94 <sup>a</sup>	.91 <sup>a</sup>
Frequency of driving (1=very infrequently, 5 = very frequently)	4.51 <sup>a</sup>	4.42 <sup>a</sup>	3.98 <sup>a</sup>	3.81 <sup>a</sup>
Gender (0=male, 1=female)	.29 <sup>a</sup>	.36 <sup>a</sup>	.41 <sup>a</sup>	.30 <sup>a</sup>
Age (1=18-24, 2=25-34, 3=35-44, 4=45-54, 5=55-64, 6=65-74, 7= 75 years or older)	3.49 <sup>a</sup>	3.48 <sup>a</sup>	3.25 <sup>a</sup>	3.45 <sup>a</sup>
Individualism ( $\alpha=.54$ )	5.14 <sup>a</sup>	5.21 <sup>a</sup>	5.36 <sup>a</sup>	5.41 <sup>a</sup>
Long-term orientation ( $\alpha=.76$ )	3.20 <sup>a</sup>	3.37 <sup>a</sup>	3.19 <sup>a</sup>	3.23 <sup>a</sup>
Power distance ( $\alpha=.70$ )	2.50 <sup>a</sup>	2.59 <sup>a</sup>	2.31 <sup>a</sup>	2.24 <sup>a</sup>
Masculinity ( $\alpha=.74$ )	4.09 <sup>a</sup>	4.34 <sup>a</sup>	3.82 <sup>a</sup>	3.99 <sup>a</sup>

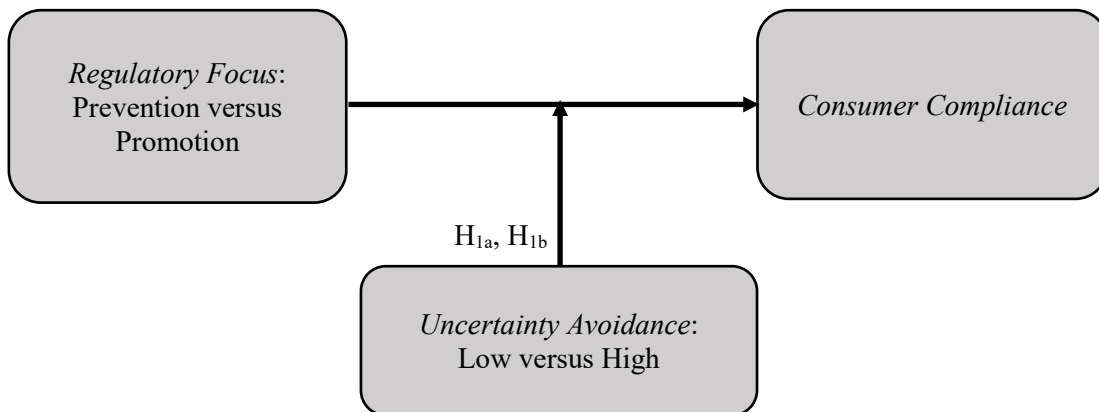
Note: Different superscripts,  $p < .05$

**TABLE 5. STUDY 2: CELL MEANS**

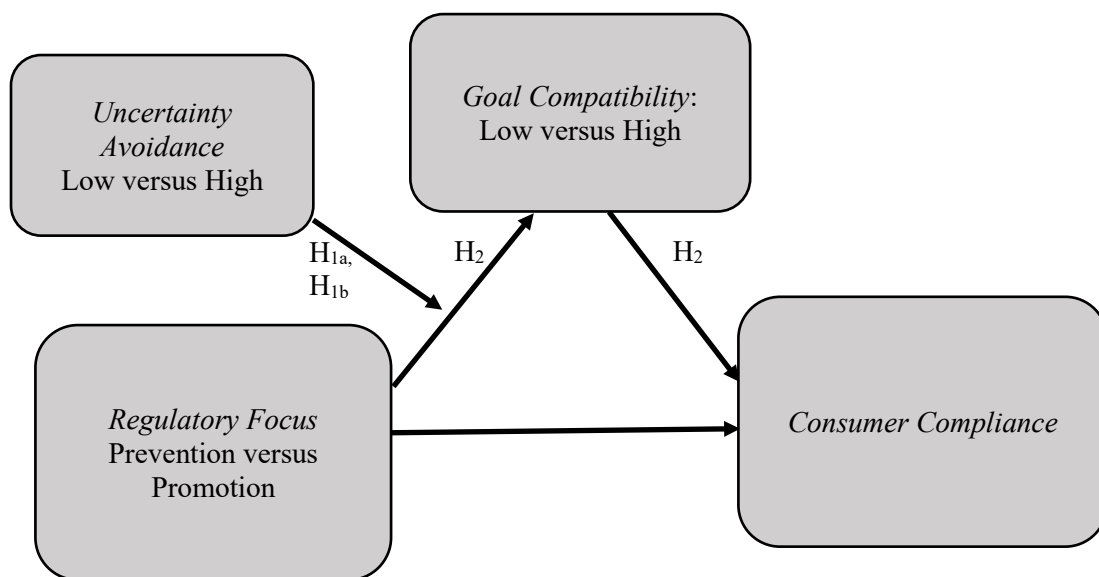
	National Culture (South Korea) High Uncertainty Avoidance		National Culture (China) Low Uncertainty Avoidance	
	Recall prevention focus	Recall promotion focus	Recall prevention focus	Recall promotion focus
N=153	N=38	N=40	N=38	N=37
<i>Manipulation Checks</i>				
Uncertainty avoidance ( $\alpha=.86$ )	4.82 <sup>a</sup>	4.86 <sup>a</sup>	2.82 <sup>a</sup>	3.25 <sup>a</sup>
Promotion focus ( $r=.55$ )	2.78 <sup>a</sup>	4.21 <sup>b</sup>	2.66 <sup>b</sup>	4.08 <sup>a</sup>
Prevention focus ( $r=.58$ )	4.65 <sup>a</sup>	3.00 <sup>b</sup>	4.62 <sup>a</sup>	2.91 <sup>b</sup>
<i>Mediator</i>				
Goal compatibility ( $\alpha=.93$ )	4.62 <sup>a</sup>	2.20 <sup>b</sup>	2.14 <sup>b</sup>	4.18 <sup>a</sup>
<i>DVs</i>				
Service adoption ( $\alpha=.90$ )	5.32 <sup>a</sup>	2.35 <sup>d</sup>	2.94 <sup>c</sup>	4.36 <sup>b</sup>
Timeliness of adoption	5.68 <sup>a</sup>	2.32 <sup>d</sup>	2.66 <sup>c</sup>	4.46 <sup>b</sup>
<i>Controls</i>				
Familiarity with data breach	3.16 <sup>a</sup>	3.28 <sup>a</sup>	3.08 <sup>a</sup>	3.43 <sup>a</sup>
Notice believability	4.21 <sup>a</sup>	4.75 <sup>a</sup>	4.53 <sup>a</sup>	4.49 <sup>a</sup>
Notice relevance	4.18 <sup>a</sup>	4.63 <sup>a</sup>	4.50 <sup>a</sup>	4.70 <sup>a</sup>
Concern of data breach ( $r=.48$ )	4.19 <sup>a</sup>	4.36 <sup>a</sup>	4.03 <sup>a</sup>	4.14 <sup>a</sup>
Risk of data breach	4.63 <sup>a</sup>	4.03 <sup>a</sup>	4.34 <sup>a</sup>	4.51 <sup>a</sup>
Attitude toward focal firm ( $\alpha=.81$ )	4.77 <sup>a</sup>	3.19 <sup>b</sup>	3.39 <sup>b</sup>	4.73 <sup>a</sup>
Promotion versus prevention focus of the individual( $\alpha=.63$ )	2.42 <sup>a</sup>	2.47 <sup>a</sup>	2.32 <sup>a</sup>	2.29 <sup>a</sup>
Bank account ownership (0=no, 1=yes)	.87 <sup>a</sup>	.93 <sup>a</sup>	.89 <sup>a</sup>	.92 <sup>a</sup>
Personal data disclosure frequency (1=very infrequently, 7=very frequently)	5.32 <sup>a</sup>	5.23 <sup>a</sup>	4.92 <sup>a</sup>	4.95 <sup>a</sup>
Gender (0=male, 1=female)	.47 <sup>a</sup>	.55 <sup>a</sup>	.53 <sup>a</sup>	.46 <sup>a</sup>
Age (1=18-24, 2=25-34, 3=35- 44, 4=45-54, 5=55-64, 6=65- 74, 7= 75 years or older)	1.16 <sup>a</sup>	1.33 <sup>a</sup>	1.18 <sup>a</sup>	1.22 <sup>a</sup>
Individualism ( $\alpha=.54$ )	2.52 <sup>a</sup>	2.60 <sup>a</sup>	2.59 <sup>a</sup>	2.63 <sup>a</sup>
Long-term orientation ( $\alpha=.73$ )	5.37 <sup>a</sup>	5.18 <sup>a</sup>	4.90 <sup>a</sup>	4.85 <sup>a</sup>
Power distance ( $\alpha=.69$ )	4.46 <sup>a</sup>	4.48 <sup>a</sup>	4.59 <sup>a</sup>	4.74 <sup>a</sup>
Masculinity ( $\alpha=.83$ )	3.54 <sup>a</sup>	3.35 <sup>a</sup>	3.69 <sup>a</sup>	3.90 <sup>a</sup>

Note: Different superscripts,  $p < .05$ .

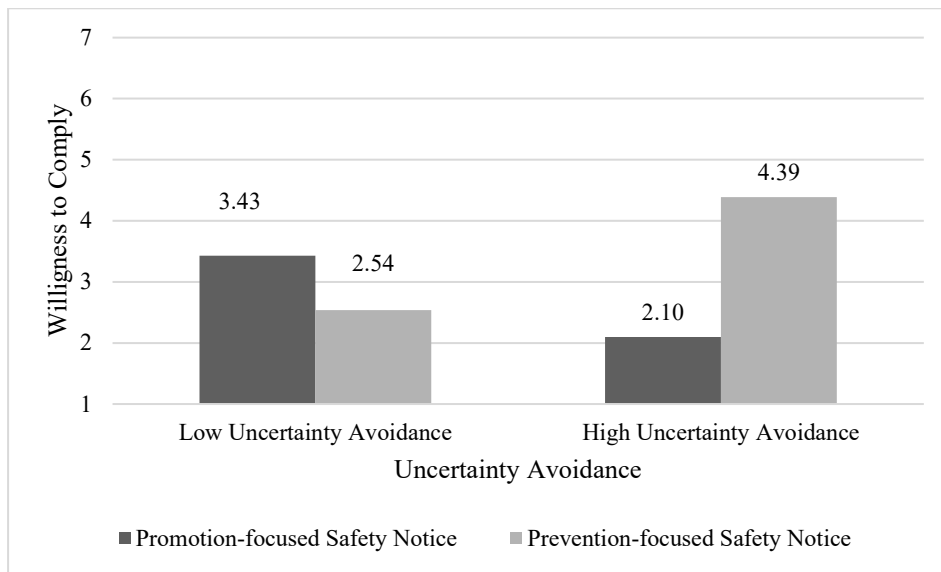
**FIGURE 1A. CONCEPTUAL FRAMEWORK:  
MODERATION EFFECT**



**FIGURE 1B. CONCEPTUAL FRAMEWORK:  
MODERATION EFFECT MEDIATED BY GOAL COMPATIBILITY**



**FIGURE 2. UNCERTAINTY AVOIDANCE AND WILLINGNESS TO COMPLY:  
STUDY 1 RESULTS**



**FIGURE 3. UNCERTAINTY AVOIDANCE AND TIMELINESS OF COMPLIANCE:  
STUDY 2 RESULTS**

