

The Impact of Product-harm Crisis on Purchase Intention: Moderating Effects of Consumer Ethnocentrism

— an Example of Toyota Recall

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Abstract—Product-harm crisis has negative effect on consumer's purchase intention. However, their responses to product-harm crisis are different among consumers with different psychological characteristics, and thus the purchase intention may also be different. This study takes Toyota recall as an example to explore the differences of the survey data before and after the recalls. The results show that the decreasing degrees are significantly different between consumers with high and low consumer ethnocentrism. Consumer ethnocentrism has moderating effects between product-harm crisis and purchase intention.

Keywords—product-harm crisis; purchase intention; consumer ethnocentrism; Toyota recall

I. INTRODUCTION

Product-harm crises—defined as “discrete, well-publicized occurrences wherein products are found to be defective or dangerous” [1] can cause great damages to a company. With increasing complex market environment, consumers require more and more information about products and producers. Because of the development of mass media, the frequency and social impact of product-harm crisis has upward trend. Sanlu milk powder incident in 2008 and the 2010 Toyota recall had great impact in consumers. In product-harm crisis, the defects of products usually damage the consumers' safety and health. The consumer's perception of risk often reduces their product evaluation and purchase intention. Therefore, companies will have certain economic losses or even bankrupt because of product-harm crisis. The research of product-harm crisis became a hot issue among marketing studies.

Previous studies validated the negative impact of product-harm crisis on brand equity, customer complaints and purchase intention. However, previous studies ignored the source of the product. The differences between domestic and foreign product-harm crisis was not discussed compared to its frequency in today's global economics. Also, the suddenly happen of product-harm crisis cause the difficulties of field research. Previous studies used experimental method which has high internal validity. But the results have defects in the external validity while the conclusions are used in real context.

This study discussed the impact of product-harm crisis to consumer purchase intention using two surveys data before and after Toyota recall. Because Toyota is a foreign brand in China, the consumers' attitude toward foreign products will affect their attitude of Toyota. This research

focused on testing the different purchase intention changes of consumers with different consumer ethnocentrism levels during foreign product-harm crisis. So the effective recommendations could be put forward to deal with product-harm crisis for companies.

II. LITERATURE REVIEW AND HYPOTHESES

A. Product-harm Crisis

The negative exposure of product-harm crisis has negative impact on the enterprises because the media is considered to be relative credible source of information communication [2]. In exploring the impact of negative information on consumers, the impression theory was introduced to the research field of product-harm crisis. During the overall process of the impression formation, people will pay more attention to negative information compared to the same degree of positive information [3]. In the context of consumer behavior, the original brand attitude of consumers should be considered [4], and the consequences associated with the consumers will also affect consumers' response. Previous study showed that the consumers' expectations of the brand moderated the impact of negative information on customer-based brand assets [5]. In addition to brand commitment, consumers involvement, brand familiarity, consumer trust also moderate the consequences of product-harm crisis [6] [7].

B. Purchase Intention

Intention is the subjective probability of individuals to engage in certain behaviors. Consumers' purchase intention is the subjective probability or possibility of buying certain product [8]. It was confirmed to be an important indicator for predicting consumer behavior [9]. The experiment showed that for durable consumer goods, purchase intentions is effective in predicting future buying behavior of consumers [10]. After product-harm crisis, consumers are often in ambivalence. At this time, the individual usually find, collect and process information to form a consistent view with tendency, and create a more confirmed behavioral intention [11]. Because the product-harm crisis generally occurs with well-known brands, purchase intention has relative high predictive power under such cases. Previous studies showed that corporate reputation, corporate social responsibility levels, product characteristics, consumer personal characteristics affected the purchase intention after the product-harm crisis.

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C. Consumer Ethnocentrism

The concept of consumer ethnocentrism (CET) was adapted from sociology. In general, the concept of ethnocentrism represents the universal proclivity for people to view their own group as the center of the universe, to interpret other social units from the perspective of their own group, and to reject persons who are culturally dissimilar while blindly accepting those who are culturally like themselves [12]. In the context of economic globalization, Shimp first introduced the concept of 'consumer ethnocentrism' [13]. It represents the beliefs held by consumers about the appropriateness, indeed morality, of purchasing foreign products [14]. Consumer ethnocentrism is a stable individual psychological characteristic, and it has significant effect on attitude, intention, preferences and purchasing behavior [15].

From the perspective of high-ethnocentric consumers, purchasing imported products is unpatriotic because it hurts domestic economy and causes loss of jobs. Products from other countries are objects of contempt to high-ethnocentric consumers. On the other hand, to low-ethnocentric consumers, they purchase products by their own merits without consideration for where they are made (or perhaps to be evaluated more favorable because they are manufactured outside their countries. Therefore, consumers with different ethnocentric levels have different points and decision-making processes when purchasing specific products. Figure 1 shows the information processes of different ethnocentric consumers [16].

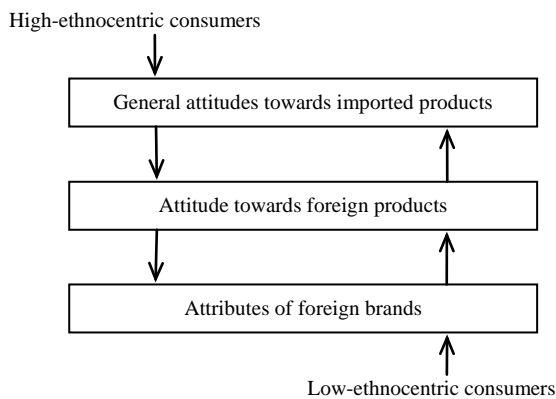


Figure 1. Consumer ethnocentrism and processing of information about foreign brands

From Figure 1, high-ethnocentric consumers tended to process information about foreign brands in a top-down manner whereas low ethnocentric consumers processed such information bottom-up. Highly ethnocentric consumers judge domestic brands unreasonably favorably compared to foreign brands. They first take the product category information to form general value judgment, and then consider product details and other information. Conversely, low-ethnocentric consumers process information about foreign brands in a bottom-up manner. These consumers first learn about attributes about foreign brands to form their attitude, so the main consideration is the product characteristics rather than the made-in information [16].

From the above literature review and analysis, the negative effects of product-harm crisis for consumers are different due to consumers' characteristics. From the perspective of impression management, the impact degree differs for different information processing of the relevant information. On the other hand, consumer behavior research shows that consumers form relationships with brands [17]. Strong relationships or attitude will weaken the impact of relevant information. New information has relative small impact on their attitude because their pre-judgment.

In dealing with foreign product information, high-ethnocentric consumers tend to form general attitude of foreign products first, then pay attention to the details of products. During foreign product-harm crisis, the exposure of information is specific about the product attributes. Such information has limited impact on high ethnocentric consumers because of their pre-bias attitude. Therefore, their purchase intention also has limited change. In contrast, low-ethnocentric consumers concern about the product attributes first, so their purchase intention change more than high ethnocentric consumers'. This leads to,

H: During foreign product-harm crisis, the impairment of purchase intention of low-ethnocentric consumers is significantly higher than high-ethnocentric consumers.

III. METHODOLOGY

A. Measurement

Data was collected by using structured survey with a set of multi-attribute scales. The questionnaire was divided into three parts. First part was the purchase intention of Toyota cars using the modified scales developed by Goldsmith [18]. The second part was consumer ethnocentrism using CETSAL [14]. The CETSAL was proved to have good validity in different countries [19]. All the items used five point Likert scale, from 1-5, respectively assigned to "strongly disagree, not consent, does not matter, agree, strongly agree". The third part was the consumer's demography information including gender, age and income. The questionnaire after Toyota recall increased a question of the awareness of recall, all the subjects knew the Toyota recall.

B. Data Collection

Data were collected from one university's MBA students using self-administered method. The first survey was conducted in November 2009 and the second survey was in March 2010. The first survey collected 339 valid questionnaires compared to 489 questionnaires were distributed totally. The second survey questionnaires were distributed 327 copies and got 249 valid questionnaires. The effective rates were 69.3% and 76.1% separately. The demographics of samples are showed in Table 1. The results of χ^2 test showed that the two samples have not significant difference ($p>0.05$) which guaranteed the comparability of two surveys.

TABLE I. DEMOGRAPHICS OF TWO SAMPLES

Time	gender	age	Family income
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	per month(¥)					
	male	female	<35	≥35	<8000	≥8000
before recall	220 (64.9%)	119 (35.1%)	282 (83.2%)	57 (16.8%)	304 (89.7%)	35 (10.3%)
after recall	168 (67.5%)	81 (32.5%)	221 (88.1%)	28 (11.9%)	215 (86.3%)	34 (13.7%)

IV. ANALYSIS AND RESULTS

A. Reliability and Validity Assessment

Cronbach's alpha reliability index was calculated to measure the reliability of each construct. According to the criterion, Cronbach's alpha should be higher than 0.7 [20]. All the scales have strong reliability. The reliability of CET was 0.86 and 0.93 before and after Toyota recall. The results of reliability and validity analysis of purchase intention are showed in Table 2.

TABLE II. RELIABILITY AND VALIDITY OF PURCHASE INTENTION

Time	M	SD	Cronbach's α	number of factors	R^2
before recall	2.55	0.86	0.95	1	90.6%
after recall	2.42	0.98	0.95	1	90.9%

The internal consistency reliability of purchase intention were greater than 0.9. The data of two surveys both extracted one factor and the ratios of variance explained are over 90%. Overall, the data of two surveys has good reliability and construct validity.

B. Hypotheses Testing

As the surveys sample are taken independently, the independent samples T-test was used to analyze the changes of purchase intention after Toyota recall. The samples were divided into two groups by $CET > M+SD$ and $CET < M-SD$. Data analysis results are listed in Table 3.

The total purchase intention reduced from 2.55 to 2.42 after recall, but the change was not significant ($p>0.05$). The purchase intention of group $CET > M+SD$ decreased from 2.38 to 2.26 ($p>0.05$), the impact of Toyota recall on purchase intention was not significant. The purchase intention of group $CET < M-SD$ decreased from 2.86 to 2.27 ($p<0.05$), the impact of Toyota recall on purchase intention was significant. Thus, the hypothesis was supported. During foreign product-harm crisis, the impairment of purchase intention of low-ethnocentric consumers is significantly higher than high-ethnocentric consumers.

TABLE III. THE RESULTS OF INDEPENDENT SAMPLES T-TEST

		Time	M	SD	t
CET	total	before recall	2.55	0.86	1.60
		after recall	2.42	0.98	
CET	> $M+SD$	before recall	2.38	0.89	0.67
		after recall	2.26	0.97	
	< $M-SD$	before recall	2.86	0.75	2.97**
		after recall	2.27	1.10	

V. DISCUSSION AND CONCLUSION

A. Discussion

In previous studies, the moderating effect of psychological characteristics and attitudes on product-harm crisis has been discussed, including the brand expectations, brand familiarity, consumer sensitivity and commitment, consumer trust and recognition of degrees [6][7]. But studies have not considered the origin of products. Another important factor is the characteristics of company, including corporate reputation, corporate social responsibility level [1]. However, for a certain company which has the product-harm crisis, the corporate reputation and social responsibility is fixed already and could not be changed quickly. Companies could not take measures in this aspect to improve purchase intention in short time. This research discussed the moderating effect of CET on foreign product-harm crisis for the first time. The results showed that the impairment of purchase intention of low-ethnocentric consumers is significant higher than high-ethnocentric consumers.

The negative impact on business is usually serious during product-harm crisis. In addition to affecting short-term product sales, it also damages the long-term corporate reputation. Take the Toyota recall for example, the Toyota Corporation not only bear the cost of the recall, but also adopted a series of promotional measures which took a lot of costs. According to the results of this study, when there are foreign product-harm crisis, consumers with different ethnocentric tendencies have different responses. For high-ethnocentric consumers, their purchase intention change little after foreign product-harm crisis. On the other hand, there is significant decrease of purchase intention among low-ethnocentric consumers. Therefore, promotional measures could only focus on low-ethnocentric consumers to decrease company costs. The measures include weakening the product source, emphasizing the superiority of the product. Therefore, the company could increase purchase intention through improve the performance evaluation of consumers.

B. Limitations and Future Research

Future research could consider two aspects. First is the impact of time factor. Experiment showed that when companies take social responsible measures of recall, consumers tend to "forget" the product-harm crisis [21]. But the experiment only descript the time (three days, three months and one year), its authenticity and external validity is not high. Future research could explore the forgetting process under real environment. Second, without knowing the occurrence of the Toyota recall previously, this study could only select relative items from the investigation before recall. That limited the variables which should be considered in product-harm crisis. Further research could use experiment to explore the interactive effects of country-of-origin, involvement and CET to put forward effective proposals for companies in product-harm crisis.

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