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# Empirical Study on Influence of Brand Crisis of Agricultural Products on Network Cluster Behavior of Consumers

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**Abstract** From the perspective of psychological contract, this paper discusses mechanism of consumers' network cluster behavior in the context of brand crisis. On the basis of Simmel's conflict theory, it presented new findings of network cluster behavior. It is concluded that brand crisis exerts significant influence on breach of psychological contract. Particularly, functional brand crisis more easily leads to breach of transactional psychological contract, while value brand crisis more easily leads to breach of relational psychological contract. Breach of transactional psychological contract more easily leads to realistic network cluster behavior, while breach of relational psychological contract does not necessarily lead to non-realistic network cluster behavior.

**Key words** Brand crisis, Network cluster behavior, Breach of psychological contract

## 1 Introduction

Frequent occurrence of famous brand crisis in recent years created dramatic social impact, such as extracting bile from live bears of Guizhentang Pharmaceutical Company and lean meat powder of Shuanghui Group. This not only deteriorates business situation of famous brands, but also brings questions of brand image from consumers. What's more, rapid development of information technology and network media further magnifies and spreads negative effect of brand crisis accident. Besides, anonymous, accidental and emotional features of network dissemination lead to psychological changes of individuals<sup>[1]</sup>, leading to cluster impulse<sup>[2]</sup>. If the situation fails to be controlled in time, it is likely to trigger large scale online condemning and boycott, which will enhance the impact on respective brand image.

In fact, occurrence of brand crisis generally means that the brand fails to reach psychological expectation of consumers in certain aspect. Accidents such as toxic capsule and extracting bile of bears reflect that some enterprises lose basic contractual spirit and corporate responsibilities. The breach of reciprocal mechanism and alienation of value chain<sup>[3-4]</sup> promote consumers to unite in network environment, forming with appeal of public opinions with considerable scale<sup>[5]</sup>, to urge enterprises to make changes in misbehavior or punish misbehavior<sup>[6]</sup>. In this paper, we introduced the theory of psychological contract to study psychological mechanism of consumers participating in network cluster behavior in the context of brand crisis, and discuss how different types of brand crisis lead to different network cluster behavior, to provide recommendations for management of brand crisis.

## 2 Literature review

### 2.1 Brand crisis

Wu Diya and Lu Bing firstly introduced the concept of brand crisis and defined the brand crisis as predicament

of enterprise due to sudden changes of external environment and out of order of brand operation or marketing management, and such predicament creates harmful effect on overall brand image and spreads to the public in a short period, greatly impairs enterprise brands and goodwill, or even constitutes threat to enterprise survival<sup>[7]</sup>. Pulling divided brand crisis into functional crisis and value crisis<sup>[8]</sup>. Functional crisis mainly refers to problems of the product itself which reduces perception of consumers about quality function of the brand, while value crisis not only concerns product quality, but also involves social or moral issue. Value crisis does not involve product functions, but it will lead to question of consumers about brand image.

**2.2 Psychological contract and breach of psychological contract** Organizational psychologist Argyris firstly elaborated the relationship between workers and contractor using psychological contract<sup>[9]</sup>. Psychological contract is a series of non-written mutual expectation between members of organizations, or return of a party hoping to pay a price or obtain from the other party<sup>[11]</sup>. In specific marketing circumstance, psychological contract between consumers and enterprises is manifested as the fact that enterprises should provide excellent products and services and perform social responsibilities, while consumers should pay corresponding money, time and effort to buy products and services of enterprises, and provide support and help for enterprises in both behavior and attitude. Most existing research findings divide psychological contract into transactional contract and relational contract<sup>[12]</sup>.

Breach of psychological contract means perception of workers about due responsibilities and duties not fulfilled by enterprises<sup>[13]</sup>. However, some scholars point out that breach of consumers' psychological contract will promote them to reevaluate their relationship with enterprise, reduce satisfaction and loyalty, and finally make the enterprise incur huge losses<sup>[14]</sup>. Unfortunately, there are few researches about how brand crisis leads to breach of consumers' psychological contract.

### 2.3 Network cluster behavior

Le Guoan defined the network

cluster behavior as group effort of certain number of unorganized netizens for certain common effect or stimulation in network environment or influenced by network dissemination<sup>[15]</sup>. Occurrence of network cluster behavior is generally sudden and unexpected, but its result is extremely destructive and the effect on behavior object is objective and constantly expanding<sup>[16]</sup>. For classification of network cluster behavior, domestic scholars combed its internal structure from different perspective, but all of them fail to reflect inherent mechanism of development of network cluster behavior. Spiritual core of network cluster behavior is fighting, while in the depth of such fighting, it is fighting and conflict of social power<sup>[17]</sup>. On the basis of Simmel's division of social conflict types<sup>[18]</sup>, in combination with existing researches and analysis of cluster phenomenon, we divided network cluster behavior into realistic network cluster behavior and non-realistic network cluster behavior. Realistic network cluster behavior is the behavior of consumers taking participation of cluster behavior as a means of realizing purpose, to solve existing problems of products in reality. In comparison, non-realistic network cluster behavior is the behavior of consumers taking participation of cluster behavior as the purpose to express their nervous emotion. In realistic network cluster behavior, there are many rational parts, but in non-realistic network cluster behavior, there are few rational parts.

### 3 Theoretical basis and research hypothesis

#### 3.1 Brand crisis and breach of psychological contract

From the perspective of theory of contract, consumers and enterprises form mutually trusting, and expecting implicit relationship through brands. Occurrence of brand crisis generally means brands fail to reach expectation of consumers in certain aspect, will break such contractual relationship to a certain extent. Negative event of brands will also lead to loss of consumers and accordingly permanently end such contractual relationship<sup>[19]</sup>. Besides, difference between ability and social responsibility error brings about different negative information processing process of consumers<sup>[20]</sup>, so as to exert different influence on attitudes and behaviors of consumers. It is not difficult to see that, the former focuses on breach of economic and external transactional psychological contract, while the latter focuses on breach of social emotional and inherent relationship psychological contract. The functional brand crisis mainly involves product quality, and it will reduce perception of consumers about the brand quality function; the value brand crisis does not involve products but is related to social or moral issue of the brand. On the basis of the above analysis, we obtain following hypothesis.

**H<sub>1</sub>**: brand crisis has significant influence on breach of consumers' psychological contract; functional brand crisis more easily leads to breach of transactional psychological contract, while value brand crisis more easily leads to breach of relational psychological contract.

#### 3.2 Breach of psychological contract and network cluster behavior

According to the frustration-aggression theory, when

people perceive that they are being prevented from achieving a goal, their frustration is likely to turn to aggression. Occurrence of aggression always takes existence of frustration as a precondition, and frustration generally brings about aggressive emotion<sup>[6]</sup>. In consumption scene, breach of psychological contract generally means enterprise fails to perform responsibilities and obligations for consumers in certain aspects. No matter the breach of transactional or relational psychological contract, for consumers, it is a type of frustration, and such frustration may turn to aggressive action, namely, the precondition for occurrence of cluster behavior. From the above analysis, it is easy to see that breach of transactional psychological contract is easier to make consumers feel deprivation of benefits, and promote then to participate in realistic network cluster behavior to solve actual product issue. The breach of relational psychological contract, especially in moral ethics, is easier to make consumers participate in non-realistic network cluster behavior, to air their nervous emotion. On the basis of the above analysis, we obtain following hypothesis.

**H<sub>2</sub>**: Breach of psychological contract has significant influence on participation of network cluster behavior; breach of transactional psychological contract more easily leads to realistic network cluster behavior, while breach of relational psychological contract more easily leads to non-realistic network cluster behavior.

### 4 Study methods

#### 4.1 Material design

Types of brand crisis. On the basis of searching and sorting many brand crisis accidents in consumer goods market, we mainly considered scope of application and brand familiarity, selected health products and Chinese patent drugs belonging to agricultural products in a broad sense as stimulating brand, took the event of "extracting bile from live bears of Guizhentang Pharmaceutical Company" and "Wei C Yingqiao Pian containing carcinogenic substances" as prototype, designed different brand crisis stimulating materials, and generally referred to these brands as Brand A. For functional brand crisis, materials indicate that harmful substances were detected in the brand product; for value brand crisis, materials show that there are problems of rearing bear in pens and extracting bile from living bear in production of the brand products, and there is also mention of product quality.

#### 4.2 Design of the scale

**4.2.1** Measurement of psychological contract. In the measurement of psychological contract, we made reference to the psychological contract scale development questionnaire of Rousseau (1990,2000)<sup>[12]</sup>, and found questions suitable for the brand crisis as much as possible and made proper adjustment. After adjustment, the scale of psychological contract includes 6 questions, 3 for transactional and relational psychological contract respectively.

**4.2.2** Measurement of network cluster behavior. On the basis of Simmel's division of social conflict types, combining existing researches and analysis of cluster phenomenon, we divided network

cluster behavior into realistic network cluster behavior and non-realistic network cluster behavior. According to this definition, we designed 6 questions, all of these passed reliability and validity test.

**Table 1** Factor analysis, Conbach's  $\alpha$ , KMO value, variance explanation rate, and cumulative variance explanation rate of psychological contract and network cluster behavior

Psychological contract			Network cluster behavior		
Question	Transactional	Relational	Question	Realistic	Non-realistic
A1. Brand A should well satisfy my actual demands	0.880		B1. I will participate in protest, till the enterprise changes unsuitable practice	0.829	
A2. Brand A should guarantee safety and reliability of its products	0.900		B2. I will participate in public activity of opposing the enterprise, to urge the enterprise to improve operating behavior	0.834	
A3. Brand A's usage should match its price	0.845		B3. I may not investigate and affix responsibilities if the enterprise make effective corrections in connection with open protest.	0.837	
A4. Brand A should be able to improve my personal image	0.909		B4. I will participate in various open protests to make illegal/immoral enterprises to get punished	0.626	
A5. Brand A should can raise my self-confidence	0.930		B5. No matter the enterprise makes any explanation, I will participate in collective protests to punish the enterprise	0.836	
A6. Brand A should value personal friendship with me	0.871		B6. No matter how the enterprise operates in the future, its fault is unforgivable, I will insist on participating in protests.	0.821	
Conbach's $\alpha$	0.860	0.899	Conbach's $\alpha$	0.787	0.656
KMO value	0.743		KMO value	0.625	
Variance explanation rate//%	41.959	39.123	Variance explanation rate//%	35.584	30.936
Cumulative variance explanation rate//%	81.082		Cumulative variance explanation rate//%	66.519	

**4.2 Data collection** Survey objects of this study included undergraduates of Economic Management Discipline from three universities in Wuhan, and we found some MBA students through tutors. In total, 240 people participated in this questionnaire survey. We issued 240 copies of questionnaire, collected 216 valid ones, the response rate reached 90% and met the requirements in both quantity and quality.

### 4.3 Reliability and valid analysis of questionnaire

**4.3.1** Reliability analysis. Results of reliability test for psychological contract and cluster behavior are listed in Table 1. Except the factor of non-realistic cluster behavior, Cronbach's  $\alpha$  coefficient was higher than 0.70. DeVellis (1991) stated that it is acceptable if  $\alpha$  coefficient is in the range of 0.65 to 0.70, thus the reliability of this questionnaire satisfies the requirement.

**4.3.2** Validity analysis. On the basis of mature scale developed by previous scholars, combining feedback information obtained through in-depth interview, we ensured the validity of the questionnaire. For structural validity, we adopted factor analysis to measure structural validity of each scale, and carried out analysis using Bartlett's test of sphericity and KMO test. In this study, KMO coefficient for consumers' perception of brand responsibility scale and network cluster behavior scale is greater than 0.6, Bartlett test of sphericity is significant ( $p < 0.05$ ), indicating factor analysis can be carried out for both scales. Factor analysis results

Specific questions are listed in Table 1. All question items were assessed using 7 point Likert scale: 1 stands for "strong disagree" and 7 means "strongly agree".

show that consumers' psychological contract and network cluster behavior can be clearly made up of 2 public factors, their cumulative variance explanation rate is greater than 65%, showing well explanation ability for research variables, so the questionnaire has excellent construct validity.

## 5 Hypothesis test

### 5.1 Relation between brand crisis and psychological contract breach and relation between psychological contract breach and participation of network cluster behavior

**5.1.1** Measurement of psychological contract breach. We applied definition of psychological contract breach introduced by Li Yuan: psychological contract breach = consumers' perception of brand committed responsibilities (pretest) - consumers' perception of brand fulfilled responsibilities (posttest). From comparison of pretest and posttest data, positive score means brand committed responsibilities are greater than brand fulfilled responsibilities, in other words, consumers have perception of "psychological contract breach". In this study, we carried out paired sample t-test to study whether there is difference between consumers' perception of brand committed responsibilities and fulfilled responsibilities. Results are shown in Table 2, different dimensions of psychological contracts have breach in varying degrees.

**Table 2** Paired t test of brand committed responsibilities and fulfilled responsibilities

		Paired difference			T	Sig. (dual sided)
		Mean value	Standard deviation	Standard error		
Pair 1	Brand overall committed responsibilities - Brand overall fulfilled responsibilities	1.741	1.479	0.101	17.294	0.000
Pair 2	Brand committed transactional responsibilities -Brand fulfilled transactional responsibilities	1.901	1.799	0.122	15.584	0.000
Pair 3	Brand committed relational responsibilities -Brand fulfilled relational responsibilities	1.574	1.696	0.170	13.641	0.000

**5.1.2** Relation between brand crisis and psychological contract breach. In this study, we adopted multiple linear regression method to test the relation between brand crisis types and psychological contract breach and the relation between psychological contract breach and network cluster behavior. Linear regression analysis results indicate that functional brand crisis more easily leads to transactional psychological contract breach ( $M_{functional} = 2.37 > M_{value} = 1.45$ ,  $F_{(1,206)} = 14.01$ ,  $p < 0.001$ ), while value brand crisis more easily leads to relational psychological contract breach ( $M_{functional} = 1.34 < M_{value} = 1.81$ ,  $F_{(1,206)} = 9.91$ ,  $p < 0.05$ ).  $H_1$  is verified.

**5.1.3** Relation between psychological contract breach and network cluster behavior. The regression analysis results of relation between psychological contract breach and network cluster behavior indicate that transactional psychological contract breach more easily leads to realistic network cluster behavior  $\beta = 0.27$  ( $p < 0.001$ ), while relational psychological contract breach does not necessarily lead to non-realistic network cluster behavior  $\beta = 0.03$  ( $p > 0.05$ ). Then  $H_2$  is verified.

## 6 Conclusions and recommendations

**6.1 Conclusions** In this study, we mainly discussed formation mechanism and influencing factors of consumer network cluster behavior in the context of different types of brand crisis. We reached following conclusions.

(i) Brand crisis has significant influence on consumers' psychological contract breach; functional brand crisis more easily leads to transactional psychological contract breach, while value brand crisis more easily leads to relational psychological contract breach. (ii) The transactional psychological contract breach more easily leads to realistic network cluster behavior, while relational psychological contract breach does not necessarily lead to non-realistic network cluster behavior.

**6.2 Recommendations** Enterprises may make in-depth study on mechanism of network cluster behavior in the context of different brand crisis from the perspective of psychological contract, make clear inherent and implicit responsibilities and obligations of brands and consumers, get to know consumers participating in network different types of cluster behavior, and finally make crisis management and remedy more pertinent. Specifically, when there occurs functional brand crisis, in other words, when crisis mainly involve product itself, enterprises should correct errors and also should care about economic, external transactional psychological

contract of consumers and provide material compensation. When there occurs value brand crisis, in other words, crisis mainly involves social and moral issues of the brand, since relational psychological contract is relatively implicit and difficult to perceive, enterprises should pay special attention to timely communication with consumers after occurrence of brand crisis. In addition, when dealing with crisis, enterprises should keep prompt interaction and communication with consumers, make definite strong desire of brand for changing current situations, and make consumers realize that participation of large scale network cluster behavior is not a win-win choice. Instead, it is recommended to guide consumers to communicate with enterprises, reduce their intention to participate in public platform network cluster behavior, and maximally reduce negative impact possibly brought by cluster behavior.

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regional superior agricultural products.

**5.2 Improving the quality of agricultural products** On the one hand, it is necessary to accelerate the development of technical norms and standards to ensure quality and safety of agricultural products while strengthening the technical guidance and services for the related production and operation entities. On the other hand, it is necessary to improve the agricultural quality and safety supervision capacity and law enforcement level; effectively increase funding efforts, introduce foreign advanced detection technology and equipment, strengthen inspectors' professionalism, and enhance the daily inspection; improve agricultural product quality and food safety control system from farm to fork, continuously strengthen accountability mechanism, and deal a serious blow to someone for criminal acts such as selling fake goods.

### 5.3 Enhancing R&D capacity of agricultural enterprises

Firstly, it is necessary to increase fiscal support, channel agricultural enterprises' capital into R&D of agricultural products, and improve enterprises' awareness of science and technology innovation; give full play to the guiding role of scientific research departments at all levels, cultivate the R&D capacity of small and medium enterprises, and encourage original innovation. Secondly, it is necessary to promote sharing of agricultural science and technology resources; effectively play technical human resource advantages of domestic teaching and research units; encourage teaching and research units and enterprises to carry out regular in-depth knowledge, technology and human resource exchanges based on agricultural enterprises' practical experience and farmers' demand. Thirdly, it is necessary to accelerate scientific and technological achievement conversion of agricultural enterprises, constantly find new problems in practice, and sum up new strategies, to enhance R&D capacity of agricultural enterprises.

### 5.4 Enhancing the processing and transforming capacity of agricultural products

Firstly, it is necessary to introduce foreign advanced agricultural processing equipment, draw on science and technology and operational experience to gradually improve the processing level of agricultural products, vigorously promote technological innovation and extension, and develop the technological equipments with independent intellectual property rights. Secondly, it is necessary to foster a number of leading deep processing enterprises of agricultural products, give full play to the leading role of agricultural processing demonstration enterprises and bases, and guide agricultural processing enterprises to gradually

gather in processing parks, development zones and small towns, to form industrial clusters and achieve economies of scale. Thirdly, it is necessary to moderately reduce the original utilities for agricultural product processing enterprises, encourage and guide enterprises to use technological innovation to improve product quality and save water and electricity resources, and focus on the incentives and subsidies to environment-friendly processing enterprises.

**5.5 Optimizing policy support and subsidy** On the one hand, according to the actual situation, it is necessary to moderately reduce agricultural utilities for ecological farm and green production base; continue to promote the subsidies to high quality agricultural products, and assist producers of high-quality agricultural products in actively expanding marketing and creating high-quality brand. On the other hand, it is necessary to further reduce agricultural financing cost, encourage and guide more financial, industrial and commercial capital to agriculture, expand agricultural credit guarantee range, increase agricultural insurance coverage, develop new types of insurance based on regional characteristics and farmers' needs, and offer awards and subsidies to the financial institutions which are good for agriculture.

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