

## Incentives for the Quality and Safety Crisis of Regional Brand Agricultural Products--Based on multiple case studies

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**Abstract:** E-commerce makes agricultural products have a considerable sales market, and the degree of market competition is intensifying. In order to strengthen the competitive position of agricultural products, more agricultural producers unite together to form regional brands and improve consumer recognition of agricultural products in the region. With the continuous development of agricultural product regional brands, quality and safety issues are also emerging, and the impact on agricultural product sales and brand are serious. This study explores the causes of 16 quality safety accidents such as Yantai "Pills Apple" by multiple case research methods. And put forward the corresponding solution to the incentives, in order to seek the benign development of the regional brand of agricultural products.

### 1. Introduction

The regional branding of agricultural products is conducive to improving agricultural quality, characteristics, and branding levels, promoting the action of industrially strengthening villages and county, improving the level of sustainable development of agriculture, and realizing a new pattern of development of one village, one product and one county. The report of the 19th National Congress of the Communist Party of China clearly stated that the implementation of the rural revitalization strategy should be based on the new requirements of the development of agriculture, rural areas and farmers in the new era. On January 2, 2018, CPC Central Committee issued the "Opinions on Implementing the Rural Revitalization Strategy", making a top-level design for implementing the rural revitalization strategy, determining the priority development of agriculture and rural areas, and actively promoting quality to rejuvenate agriculture, and brand to strong farmers. However, the regional brand of agricultural products is different from the general corporate brand or regional brand, it has the characteristics of openness, non-exclusiveness, externality and regional cultural interaction, multi-subjectivity, etc., and the influencing factors are complex and diverse (Shen Pengyi, 2011), the diversification and speed index of information dissemination channels under mobile internet, the agricultural product brand crisis events such as "Sichuan locust citrus", "Spraying expanding Agent of *Myrica rubra* in Cixi, Zhejiang" and "Grape causes cancer in Yichun, Jiangxi", frequently agricultural brand crisis events more frequent exposure of regional brand construction of agricultural products "added to the frost.". Therefore, this study provides theoretical support and practical guidance by arranging the quality and safety crisis of typical regional brand agricultural products in the past 10 years, exploring crisis-inducing factors from the perspective of crisis cases, to promote the benign development of agricultural product regional brands.

### 2. Literature Review

#### (1) Definition of regional brand of agricultural products

The definition of regional brands agricultural products focus on three aspects: the main body, geographical indications and industrial clusters. In terms of the main body, starting from the enterprise, the regional brand of agricultural products is the sum of goodwill of a brand of agricultural enterprises (or families) with considerable scale and strong production capacity, high

market share and influence formed within a certain region (Zhu Yulin, 2006). In terms of geographical indications, agricultural product regional brands usually appear in the form of "area name & category name", such as Wuchang Rice, Xinyang Maojian, etc. (Thode & Maskulka, 1998; Zhang Chuantong & Lu Juan, 2014), agricultural product regional brand as a special regional logo, using "signal effect" and "recognition effect", displays the quality characteristics of agricultural products to consumers (Wang Yanping, 2013). Schoole (1965) suggests that consumers' overall perception of the origin of the brand will affect consumers' evaluation of the origin of the product and purchase decisions. Industrial Clusters, Yu Yan (2015) believes that industrial clusters can directly promote the competitiveness of SMEs' brands, and indirectly enhance the brand competitiveness of relevant individuals and enterprises through radiation effects and synergies. Marshall (1920) refers to the specific area of specialized industrial cluster as "industrial district", and puts forward that "industrial district" is a network area for effective competition and cooperation and exchange among small and medium-sized enterprises. The regional brand of agricultural products is a producer of high-quality agricultural products in the industrial zone, and more effectively transmits collective information to the market at a lower cost to realize brand-based management of its origin (Liu Li, 2006). Combined with the existing research results, this study defines that the regional brand of agricultural products is formed within a specific geographical scope, has a set of product specifications and standards, and has a certain degree of recognition in the market. The sum of product symbols and logos that cause consumers to associate.

## (2) Incentives for the quality and safety crisis of regional brand agricultural products

The research results of the induced factors of regional brand agricultural product quality and safety crisis mainly focus on the three aspects of the nature and structure of the participating entities, life cycle and regional brands. Participating entities mainly focus on the government, cooperative economic organizations, leading enterprises and the news media (Huang Wei, 2008; Hu Zhengming, 2010). The government is the main promoter of regional brand management and marketing, conducting market supervision, resource integration and scientific planning. The local government is the leader in the creation of agricultural product regional brands, which directly determines the development results of regional brands. The poor management of the government will lead to the confusion of the regional brand market of agricultural products. (Song Zhaohui, 2009; Pasquinelli, 2014; Song Lei, 2016). Cooperative economic organizations are regional brand interests coordinators. Local governments control regional brands with high risk and low effectiveness. It is necessary for all cooperative economic organizations to work together to build regional brands through endogenous power (Takafumi & Ikuta & Kou & Yukawa, 2007), at the same time there is a synergy between regional brands and agricultural products in the region (Celso & Lopes, 2018). Lack of management of cooperative economic organizations will lead to "free rider" behavior of unscrupulous enterprises or businesses in the region. Leading enterprises are the main force of regional brand building, which can attract and lead other enterprises in the regional network, and its development affects the construction of regional brands of agricultural products (Lorenzini & Baden Fuller, 1995).

The news media is the promoter of regional brand building. It has a unique and non-negligible role in brand promotion and information communication. Wrong media orientation will affect consumer perception, which will cause a heavy blow to regional brands of agricultural products (Hu Zhengming, 2010). In terms of life cycle, there are differences in the core performance and development focus of regional brand building of agricultural products at different stages, and the life cycle of regional brands is divided into four stages: incubation period, infancy period, growth period and maturity period. The core of the first three phases focuses on building and promoting brands; while the key to maturity is the management and protection of brands, and management errors may lead to the demise of regional brands of agricultural products. In terms of the nature and structure of regional brands of agricultural products, In terms of the nature and structure of agricultural product regional brands, Wang Wei (2006) found that the "free-riding" chaos caused by the non-exclusiveness of regional brands, liability shirking caused by the ambiguity of public property rights, "tragedy of the commons"<sup>[18]</sup> caused by the imbalance of interest-driven structure,

imbalance of public resources caused by the imbalance of the combination of property rights and management rights, which all have become a major risk of quality and safety risks.

However, the existing research results mostly use qualitative methods to analyze the inducement, and present fragmentation, while neglecting the change of attitude towards product quality and brand in the mass consumption. It is necessary to introduce consumers to enrich the risk factors of regional brand quality and safety of agricultural products. Therefore, this study further divides the responsibilities of regional brand management subjects of agricultural products, and systematically improves the inducement set of quality and safety crisis.

### 3. Research Methods

This study focuses on the "incentives of regional brand agricultural product quality and safety crisis" as the research content. The case study method is considered to be the most appropriate and early stage in the construction of a new theory, that is, the most appropriate tool for studying the "what" and "how" questions<sup>[19-21]</sup>, and can describe and explain the relevant issues highlighted in the case in detail<sup>[22]</sup>. Combined with the content of this study, compared with other research methods, case studies can directly identify the causes of the quality crisis of branded agricultural products in the region through the analysis of specific crisis cases. Secondly, compared with the single case analysis, multi-case studies are more likely to accurately and reliably quantify the causes of the crisis, and describe the extent and results of the predisposing factors in the multi-scenarios of regional brand agricultural product quality and safety crisis<sup>[23-24]</sup>. Therefore, this study uses a multi-case study method to systematically explore the key incentives for the quality and safety crisis of regional brand agricultural products in China.

### 4. Research Process

#### (1) Case selection and data collection

The purpose of this study is to study the incentives for the quality and safety crisis of regional brand agricultural products in China, so it should be selected according to the following three criteria: First, the case occurs in various provinces and cities in China; second, the case is typical and belongs to the quality and safety of regional brand agricultural products; Third, it is reported by authoritative media channels such as the government's official website and media news reports to ensure the credibility of the case.

According to the above criteria, the typical case of 16 regional brand agricultural product quality and safety crisis occurred in 2007-2018 was selected. The specific events are shown in Table 1.

Table 1 Regional brand and specific crisis of agricultural products

Num.	Regional brand	Crisis event	Num.	Regional brand	Crisis event
1	Guangdong Aquatic Products	2007 Drug residue exceeded the standard	9	Jiujiang Rice	2013 Cadmium rice
2	Xinjiang Jujube	2008 Fraud, illegal manufacturing	10	Wuchang Rice	2015 Fraud
3	Shandong Jujube	2012 Ripening	11	Gaozhou Longan	2016 Mold exceeded
4	Yantai Apple	2012 Medicine bag	12	Shaoguan Black Chicken	2018 Specified material exceeded
5	Minnan Orange	2013 Dyeing	13	Jinzhong Egg	2018 Specified material exceeded
6	Qingzhou VegeTables	2013Banned pesticide preservation	14	Hefei Yellow Fish	2018Specified material exceeded
7	Weifang Ginger	2013 Shennong Dan fresh	15	Taro Pickles	2018 Sulfur dioxide exceeded
8	Xinyang Maojian	2013 Pesticide tea	16	Youxi Tea	2018 Pesticide residue exceeded the standard

In order to ensure the authenticity of case information data, this study uses the authoritative channels of the State Administration of Markets, media news and reports, and Chinese and foreign journal databases as the main source of data.

## (2) Incentive identification and analysis

Firstly, the 16 typical case data are analyzed and analyzed, combined with previous scholars' research on the quality and safety crisis of regional brand agricultural products, the problems in each case are listed, the corresponding crisis events are described and the causes of the crisis are classified, and the incentives are extracted. The process is shown in Table 2.

Table 2 Analysis of the incentives for regional brand agricultural product quality and safety crisis

Num.	Regional brand	issue	Description	Classification of incentives
1	Guangdong Aquatic Products	In 2007, Guangdong's aquatic products were found to contain malachite green; the over-standard aquatic products inflows into the overseas market, resulting in a sharp decline in the export of aquatic products in Guangdong Province.	① Enterprises illegally add non-edible substances ② Unqualified aquatic products flow into the market	① Unscrupulous business (individual) ② Inadequate administrative supervision ③ Social mentality imbalance
2	Xinjiang Jujube	In 2008, Xinjiang Province found a company illegally added soy sauce dyeing, added sweetener to add sweetness, and investigated nearly 10 tons of irregular red dates.	① Illegal addition of non-edible substances ② Consumers pursue color red sweet dates ③ Treated red dates into the market	① Unscrupulous business (individual) ② Consumer incorrect concept ③ Inadequate administrative supervision ④ Social mentality imbalance
⋮	⋮	⋮	⋮	⋮
15	Taro Pickles	In 2018, Chenghai sauerkraut and Chaoshan pickles, which were produced at the Jingsheng Desheng Food Factory in Jingdong Mall, were detected. The sulfur dioxide was seriously exceeded.	① Unsatisfactory production ② Undetected product failed and entered the market	① Unscrupulous business (individual) ② Government supervision is weak ③ Social mentality imbalance
16	Youxi Tea	In 2018, the Fujian Food and Drug Administration investigated and handled a group of Dahongpao in Youxi County, and glyphosate (herbicides) exceeded the standard.	① Agricultural residues exceed the standard ② Unqualified tea flows into the market	① Business (individual) incompetence ② Unscrupulous business (individual) ③ Inadequate administrative supervision ④ Social mentality imbalance

On this basis, the incentives appearing in 16 cases are clustered and the seven incentives are summarized: social mentality imbalance, unscrupulous business (individual), incorrect customer

perception, inadequate administrative supervision, and insufficient enterprise (individual) ability, force majeure external factors, consumers do not trust the brand. Combine the content of this study to define the incentives (as shown in Table 3).

Table 3 Definition of incentives

Incentives	Specific expressions
Social mentality imbalance	Refer to the problems that arise at all levels, that is, the excessive pursuit of efficiency and quick success. The imbalance of social mentality will not directly lead to crisis events, mainly indirectly affecting the crisis by influencing the behavior of the two entities of the enterprise and the consumer. First, enterprises neglect morality and the natural environment because they seek economic benefits. Second, consumers are more interested in the concept of improper consumption of appearance and taste.
Unscrupulous business (individual)	Refer to the violation of business theory by enterprises. In the process of production and processing of agricultural products, the quality and safety of agricultural products are caused by malicious interests and moral integrity.
Incorrect customer perception	Refer to the continuous economic development so that people's living standards rising, consumer attitudes will change accordingly, in terms of food supplies, and more pursuit of quality, appearance and taste.
Inadequate administrative supervision	Refer to the lack of government administrative supervision mainly in the aspects of the imperfect legal system and the density of market supervision and insufficient punishment. Although China's food safety legal system has been continuously improved, there are more than 1, 000 related laws and regulations, but the popularity of relevant laws is low, which makes some enterprises and individuals misunderstand the food safety laws, and thus violates the law; "No quality", local government "local enterprise protectionism" and other attitudes lead to negative regulatory behavior, while the powers and responsibilities of the regulatory authorities are unclear, making the regulatory system develop viciously.
Insufficient enterprise (individual) ability	Refer to the lack of capacity of enterprises (individuals), which refers to production accidents caused by mistakes or unqualified production conditions of enterprises (individuals), problems such as poor sales and management of enterprises..
Force majeure external factors	The force majeure external factors in this study refer to natural disasters and water pollution and elemental radiation that farmers or enterprises have no consciousness or ability to solve.
Consumers do not trust the brand.	Consumer distrust of the brand means that the lack of awareness of news reports and media propaganda will make consumers misunderstand, mistrust and misunderstand a certain regional brand, and thus expand the quality and safety crisis of agricultural products.

The study counts the frequency of occurrence of various crises, and the results are shown in Figure 1.

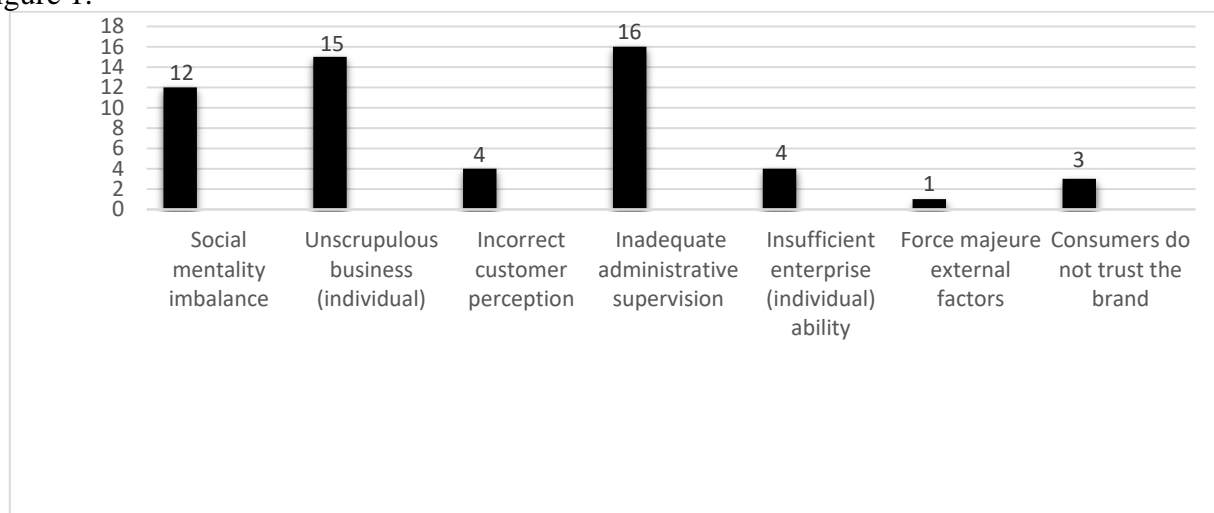


Figure 1 Frequency distribution of the seven major incentives

By analyzing the specific incentives of regional brand agricultural product quality and safety crisis, it is found that the seven incentives have different directions and degrees of quality and safety crisis and there is a certain correlation between the incentives. This study classifies it according to the degree of action and correlation of different incentives:

Implicit incentives: social imbalances. Under the stable state of agricultural product regional brands, the implicit incentives lead to the first-level incentives of "enterprise (individual) unscrupulous" and "consumer incorrect concept", which in turn affects the stable state of agricultural product regional brands.

First-level incentives: unreasonable business (individual), inaccurate consumer perception, weak administrative supervision, incompetent enterprise (individual), and external factors of force majeure. The above five incentives directly lead to the quality and safety crisis of regional brand agricultural products.

Secondary incentives: Consumers do not trust the brand. Due to the excessive interpretation of the media, exaggeration of the facts, etc., consumers do not trust the brand, and ultimately lead to the "tragedy of the commons", affecting the development of agricultural products in the entire region. The specific function diagram is as follows:

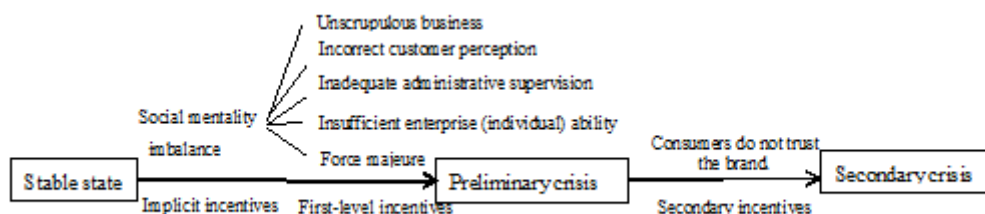


Figure 2 Incentives diagram

## 5. Conclusions

This study uses a multi-case study method to analyze the causes of the outbreak of regional brand agricultural product quality and safety crisis in China, and identified seven main incentives: social mentality imbalance, unscrupulous business (individual), incorrect customer perception, inadequate administrative supervision, and insufficient enterprise (individual) ability, force majeure external factors, consumers do not trust the brand. Combining the classification of incentives and its mechanism of action, it proposes to evade the crisis from the following five aspects:

First, adjust the social mentality, and both production and consumption go hand in hand. Improve the quality of enterprises (individuals), use laws and other means to regulate production; correctly guide the concept of consumer consumption, local governments and the mass media must act together to objectively and correctly analyze the safety of agricultural products, and cultivate consumers' correct prevention and self-identification ability, thereby reducing the risk of consumers vetoing agricultural products in a certain region.

Second, strengthen special knowledge training and cultivate producer safety awareness. For agricultural producers, improve their vigilance against banned pesticides and restricted pesticides, advocate scientific and rational methods for agricultural production, enhance producers' skills and capabilities, and control the risk of crisis outbreaks from agricultural sources.

Third, improve the regional brand management regulations for agricultural products and strengthen government supervision. Local governments have a dominant position in regional brand management of agricultural products. Local governments should strengthen the management of regional brands on the basis of national laws and regulations, and integrate agricultural resources, in the three periods of integration planning, integration development and integration maturity. The government which plays the role of advocate, planner, supporter, manager and service provider<sup>[25]</sup>, should formulate local agricultural product management regulations, strengthen the quality and safety testing of agricultural products, expand the scope of sampling inspections, and increase the frequency of sampling inspections. Increase penalties for violations of laws and regulations<sup>[26-27]</sup>.

Monitor the media, correctly guide consumers' consumption concepts, prevent the media from exaggerating quality and safety incidents, and reduce the "strain effect".

Fourth, strengthen the alliance, enhance the regional brand influence of agricultural products, and improve vicious competition the between enterprises caused by the dispersal of agriculture itself and the consensus of non-brand construction of enterprises<sup>[28]</sup>, and achieve a good two-way interaction between regional brands and corporate brands<sup>[29]</sup>.

Fifth, increase environmental management efforts and promote the development of green ecology. While China's market economy is developing at a high speed, it should pay attention to the harmonious coexistence between man and nature, and not to sacrifice profits at the expense of the environment. For example, the "cadmium rice" incident is actually that the factory does not discharge sewage according to the standard, which makes the soil pollution serious and heavy metals pass. Enrichment in crops and animals will cause greater harm to the human body. It is necessary to strengthen the awareness of green development and make the social economy healthy and healthy.

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