

Statistical Analysis on Perception of Green Food Consumption in Hangzhou

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Abstract

With the continuous development of social and economic level and the continuous improvement of people's living standard, consumers are paying more and more attention to the food safety. Hangzhou has been confirmed as the second batch of pilot cities for national food safety demonstration city. The city has always put food safety issues on top of priorities and actively created a safe city image with quality first and reliable sources of food materials. The green food and organic food certified by relevant departments are significantly better than conventional food in terms of safety and reliability and are gradually favored by consumers. Therefore, it is of great practical significance to carry out the investigation and study on the consumption status of green food, which can promote the healthy development of green food industry. Take Hangzhou city as an example, eight administrative region of Xihu, Yuhang, Uptown, Downtown, Binjiang, Jianggan, Gongshu and Xiaoshan district were selected as the research object, and field investigation was conducted to understand the degree of public understanding of green food, consumer habits, results of statistical analysis indicated that factors of age and education significantly affecting public consumer behavior of green food, and the development prospect of green food industry in Hangzhou was further explored.

Keywords: Green food; Consumption status; Food safety; Hangzhou.

1. Introduction

With the continuous development of social economy, people's pursuit of food quality is getting higher and higher [1-3]. At the same time, food safety affects human health and life safety. Countries all over the world pay great attention to this topic and launch intense discussions on it. China also attaches great importance to the problem of food safety and has actively launched the establishment of national food safety demonstration cities [4-6]. Hangzhou has been confirmed as the second batch of pilot cities for national food safety demonstration city.

In the early 1970s, many countries were influenced by the idea of "organic farming" introduced by the United States. After the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, more and more countries began to explore the development of sustainable agricultural, which made the developed countries in Europe and the United States and some developing countries accelerate the research on ecological agriculture [7-9]. Under the general background of agricultural development research, China has decided to develop safe, high-quality, and pollution-free nutritious food and named with "green food".

2. Questionnaire Analysis

In this survey, a total of 475 valid questionnaires were collected. Among them, males accounted for 49.3%, and females accounted for 50.7% of the whole interviewee. Questionnaires were distributed according to the randomness of the population, which also represented that different gender groups pay similar attention to the green food issue.

The survey mainly focused on people aged between 25 and 40, accounting for 65.9%; It was followed by people under the age of 15, accounting for 22.3%. In the age group under 40, students and office workers account for the majority and are the most important part.

2.1. Reliability analysis

Reliability analysis was conducted, and the results are showed in Table 1, the coefficient of Cronbach's Alpha was 0.598, and the coefficient of standardized Cronbachs Alpha was 0.594, indicating the reliability of factors for purchasing are good.

Table 1 Statistics for reliability analysis

Cronbach's Alpha	standardized Cronbachs Alpha	contents
0.598	0.594	5

2.2. Cross-over analysis

2.2.1. Gender factor

Pearson analysis was conducted, and the results are showed in Table 2 and Table 3, whether select green food as top priority didn't significantly correlated with the gender ($p > 0.05$).

Table 2 Cross-over analysis for gender factor

	Male	Female	Total
Top priority	142	156	298
Not a priority	30	20	50
Either	62	65	127
Sum	234	241	475

Table 3 Pearson analysis for gender factor

	Value	df	Sig. (two tailed)
Pearson	2.626 ^a	2	0.269
Likelihood ratio	2.639	2	0.267
N	475		

2.2.2. Education factor

Pearson analysis for education factor was conducted, and the results are showed in Table 4 and Table 5, and the results showed tata whether select green food as top priority extremely significantly correlated with the education ($p < 0.01$).

Table 4 Cross-over analysis for education factor

	Below high school	Junior college	Undergraduate college	Master	Doctor	Total
Top priority	39	62	156	36	5	298
Not a priority	5	22	23	0	0	50
Either	21	31	59	10	6	127
Sum	65	115	238	46	11	475

Table 5 Pearson analysis for education factor

	Value	df	Sig. (two tailed)
Pearson	23.552 ^a	8	0.003
Likelihood ratio	27.259	8	0.001
N	475		

2.2.3. Age factor

Pearson analysis for age factor was conducted, and the results are showed in Table 6 and Table 7, and the results showed tata whether select green food as top priority extremely significantly correlated with the age factor ($p < 0.01$).

Table 6 Cross-over analysis for age factor

	Age below 25	25-40	Age above 40	Total
Top priority	60	211	27	298
Not a priority	15	32	3	50
Either	31	70	26	127
Sum	106	313	56	475

Table 7 Pearson analysis for age factor

	Value	df	Sig. (two tailed)
Pearson	16.990 ^a	4	0.002
Likelihood ratio	15.982	4	0.003
N	475		

2.3. Principal Component Analysis (PCA)

According to the weight values of the five purchasing factors (Price, Brand, Nutrition, Safety and Convenience), principal component analysis was conducted, and the results were showed in Table 8, dimensionality reduction was used to calculate the major components. It can be observed that nutrition was the representative of the main concern of purchase, and purchase convenience can be regarded as the representative of the restrictive factors of purchase of green food.

Table 8 Principal Component Analysis and component matrix

	Component 1	Component 2
Price priority	0.611	0.432
Brand	0.734	0.189
Nutrition	0.741	-0.378
Safety	0.662	-0.491
Convenience	0.282	0.716

3. Consumption analysis of green food

3.1. Focus on green food

From Fig.1, we can see 57.7% of the citizens tend to observe the production date, 24.2% of the citizens will pay attention to the green food symbol on the package, and 18.1% of the citizens do not care about any mark on the package. According to data, only part of the citizens will pay attention to whether the food they buy is green food, while other citizens pay little attention to whether the food is green food or not, but focus on the production date and shelf life.

For further analysis, 54.5% of the citizens correctly selected the green food label, while the remaining 45.5% of the citizens chose the green food label by mistake. Although more than half of the citizens are concerned about green food, there are still a large part of the citizens are still not very clear.

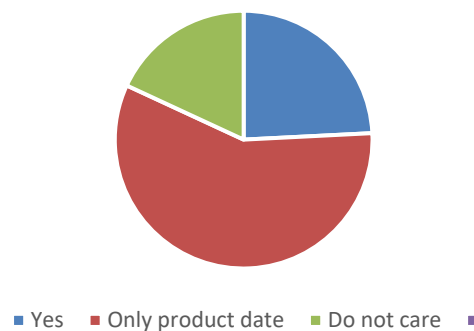


Fig.1 Results for “Whether pay attention to the green food symbol on the food package.”

3.2. Promotion and Price of green food

Fig.2 show what kind of promotional activities citizens prefer for green food purchasing. We find that 32.2% of citizens prefer to buy green food at a reduced price, 25.5% prefer to taste green food for free

before purchasing, and 21.8% prefer to accept gifts when buying green food. And 20.5 percent want to buy one get one free when buying green food.



Fig.2 Results for “Which promotion does the interviewee prefer for green food purchasing.”

Fig.3 show the expected price range of green food. Most of the citizens have very consistent choices, 57.9% of the citizens want the price range of green food to be between 15% and 30% higher than that of ordinary food, and 29.7% of the citizens want the price range of green food to be less than 15% higher than that of ordinary food. 9.7% of the public have no price expectations, they think safety is more important than price, and 2.7% of the interviewee think higher than 30% of the ordinary food is still acceptable.

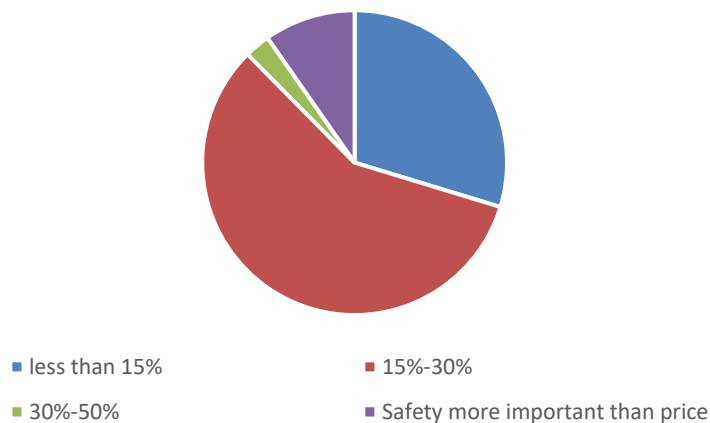


Fig.3 Results for “Price interviewee expect for green food purchasing.”

3.3. Suggestion for development of green food

“Investment analysis and prospect forecast report for China green food market in 2016-2020” pointed out that developing the green food, is not only beneficial to protect the environment and promoting sustainable agricultural development, but also to increase farmers' income, improve the economic benefits of enterprises, expand the export of agricultural products and the industry.

Entering the new century, China has entered the stage of building a well-off society in an all-round way. To achieve this grand goal, the sustainable and stable development of agriculture must be ensured. Therefore, China's agricultural development has stepped into a new stage of development, the new stage has brought the opportunity of structural adjustment, industrial upgrading, but also brought the challenge of market competitiveness and food safety. While the agricultural reform brings economic and technical support to the development of green food industry, it also puts forward higher requirements for green food

industry than ordinary food industry. Although in the environment of agricultural products and food, as an emerging industry, the proportion of green food is small, but it is a work that cannot be ignored, this work has shown the great significance and broad development prospects it brings to the society. From the survey, it is mainly manifested in the following three aspects:

(1) How to make green food become the darling of the food industry in the future

Since it is green food, since it is a commodity, it cannot do without packaging, advertising. And now, with the development of web celebrity, an ordinary T-shirt worn on a star will be sold out for tens of thousands. Suppose these celebrities promote green and healthy eating and encourage people to buy green food, and thus promote the consumption of green food to become a fashion. Five years ago, you might hate running, five years later, you're willing to pay for a card to go to the gym every day. That's a paradigm shift. The increasing number of people tanning their bodies online makes you want to dash to your local gym right now. The development of green food can also be used for reference, all for health. I hope there will be "web celebrity green vegetables" and "web celebrity green drinks" in the future. In short, in this new youth society that pursues health and fashion, in the resounding slogan of "for the next generation", healthy and high-quality green food will surely become a new fashion and be favored by people.

In view of the current situation of high price and few places to buy, the best solution is to improve technology, reduce the price and expand the range of supply [10-11]. But this action, needs strong support from the government. If the government further strengthens the support for the development of green food industry and realizes the goal of leading green food industry in Hangzhou, then the development model of green food industry in surrounding towns will be driven to develop. In terms of policy, it is moderately inclined to the development of green food in surrounding towns, and gives appropriate financial subsidies to provide a good social environment for the development, production and sales of green food. According to local conditions and combining with local characteristic industries, the development plan of green food industry in line with local development needs should be formulated to promote the construction of green food bases in each region, so as to promote the gap of green food types between large supermarkets and small and medium-sized supermarkets and promote the consumption of green food [12-13].

(2) Marketing of green food needs "means"

Previous study showed that happy attitudes, shaped by perceptions of nutritional content, ecological health, and sensual attractiveness attributes, led consumers to buy organic foods. Therefore, consumers' desire for direct sensory experience can also be satisfied by the rich and detailed description of key food sensory experience in advertising information.

According to the survey, people prefer to a reduced price of green food. After all, the price of green food will be higher than that of ordinary food, and people can accept the price appropriately higher than that of ordinary food. At present, the price issue is an important reason for people to worry about buying green food. In the future, we need to improve the technical level, reduce the price, and attract consumers by means of sales promotion, so that consumers are more willing to accept and try to buy and understand green food. The survey found that the effect of all the promotion methods is not too different and can arouse the desire of consumers to buy green food. People generally like coupons, buy and get free and other new ways of promotion, using people's buying psychology to stimulate the consumption of green food. With the diversification of promotional activities and the increasing attention of consumers to green food, the advantages of green food are very obvious.

In addition, the current development of the Internet is very rapid, in the future, green food online sales will be better and better. From the perspective of industry development, with people's consumption from

offline to online, the level is also improving day by day, online shopping has become a trend, the best sales means is the Internet. In the context of "Internet +", the new generation of information technologies such as mobile Internet, big data, cloud computing and Internet of Things have achieved cross-border integration with the green food industry, which has brought a good promoting role to the development of the green food industry.

Nowadays, the biggest problem facing the development of green food is that the publicity is not in place and the popularity is not high. Some consumers have little understanding of green food, which leads to a small proportion of green food consumption. How to strengthen the publicity and popularization of green food has become the key to solve this problem [13-14]. In the "Internet" age, it is difficult for anything that has no personality, topic, or entertainment to spread widely. Therefore, the publicity and popularization of green food should seize this opportunity well, need to meet the needs of these young groups, through them, make the spread of green food more widely. Diversified categories, complete and sound product system, younger packaging and personalized publicity will be more favored by this group. Make full use of TV, magazines, newspapers and other news media resources, coupled with the spread of a wider range of network media channels and live steaming, facing the society, fully popularize the green food standard certification, quality management system and other related knowledge. In addition, multi-level, multi-form and multi-channel publicity activities, such as various theme activities and experience activities related to green food, can be held to expand the scope of publicity, shorten the distance between consumers and green food, and improve people's awareness of green food. Through different ways to increase the publicity of the concept of "green", multi-pronged, change people's outdated consumption concept, so that the advantages of green food more deeply rooted in the hearts of the people. Through all-round publicity and education, people can establish the consumption concept of safe, pollution-free and sustainable development of green food, realize the importance of developing green food, increase the market demand of consumers for green food, and accelerate the development of green food industry [15-16].

(3) "Green" concept

The pursuit of "healthy, peaceful, green and sustainable" will inevitably become a development trend in the future. In recent years, with consumers paying more and more attention to food safety, the quality of agricultural products has made some achievements, and the status of green food is constantly improving. Nowadays, people are chasing fitness and living a rational life. From the beginning to the present, more and more consumers will choose to buy green food, and the consumer market of green food is also growing. It is the trend of the Times to attach importance to the concept of green. Developing green food and popularizing green food are the only way to improve the quality of our agricultural products. We believe that the future cooperation in all aspects, through the joint efforts of the government, enterprises and institutions, will be more and more perfect in the popularization of green food, scientific and technological production and trade. Enhanced technology can reduce the cost of enterprises. Low cost of enterprises can bring low price of green food and lower the price, so people will naturally accept and buy high-quality and inexpensive green food. Green food follows the concept of sustainable development, natural resources and ecological environment are the basic conditions of food production. Nowadays, under the vigorous popularization of the government, everyone has realized that environmental protection is the major theme of today. The concept of "green" is also gaining popularity among people. From the free fluorination of air conditioners and refrigerators, step by step measures are taken to protect the environment, so the concept of "green" is crucial to the development of green food [12, 14].

During the study period, we found that most of the supermarket green food scattered on different shelves, only a small number of supermarkets have green food section. As the name suggests, the zone can better promote the consumption of green food. The survey found that compared with ordinary consumers, consumers who live near supermarkets in the green food area pay more attention to green food and are more willing to buy green food. The staff of the green food zone will also introduce the green food to consumers, the source and development of the green food. For example, Shulan Agriculture, a famous green food company in Hangzhou, has its own special green food store in the West Lake Cultural Square Shop. Setting up special areas for green food in supermarkets to promote green food will make it easier for consumers to find and identify green food more quickly, which will not only promote consumers' understanding of green food, but also promote the sales of green food in supermarkets [10]. Green procurement is the premise and foundation of green consumption. Procurement is the first link of commodity circulation. To develop green procurement and provide consumers with healthy, environment-friendly and high-quality products is the premise of green consumption. If enterprises can better cooperate with the market, establish a special area for green food, establish a green purchasing alliance, give full play to the network advantages of chain members and promote trust consumption, then consumers' consumption of green food will be improved.

As a consumer, more attention should be paid on which closely related to their own food, through a variety of different messages to understand the green food, at the same time to determine a variety of news of true and false, and then in the purchase of green food, through regular sales channels to purchase, not caused by showed himself cheated, don't give any bad supplier development opportunity, We should also actively report illegal behavior of bad suppliers. At the same time, consumers should also strengthen their own legal awareness, when their consumer rights and interests are violated, they should know how to protect their own rights and interests. High-quality green food usually has a higher sales price. Consumers need to take their consumption level into consideration and buy the green food that they desire and can accept. In the level of consumption, remember not to blindly follow the trend of consumption, choose the most suitable for their own purchase of green food, to achieve real rational consumption.

4. Conclusions

The market of green food is developable. If you want to do a good job, you must have a good reputation and increase publicity. Moreover, you need to establish a brand, and let the brand have a high public praise to obtain the loyalty of consumers to the brand. The green food in the market and society have won a certain degree of attention, more and more people began to pursue a green life, so green food has become the favorite of these people. But at present, there are still many consumers only stay on the one-sided understanding of green food: Unable to accurately judge the green food logo, the definition of green food, for the purchase of green food very easygoing, more focus on food packaging production date and shelf life, and even some customers don't focus on anything, think the things in the supermarket sales won't associate with any problems after check. On the contrary, the development status of green food does exist such as low publicity, high price, few places to buy and few choices of products. At the same time, some consumers will doubt the quality assurance of green food.

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