

Opportunities and Obstacles Faced in Chinese Plant-Based Food Industry

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ABSTRACT. *Since the environmental problems caused by food production are becoming more and more serious, a new industry called plant-based food industry has emerged. With the main focus on Chinese plant-based food industry, this paper discusses the opportunities and obstacles to illustrate that the Chinese market is very potential and can be successful. Through the analysis of the pros and cons of the market, so as to have a deeper understanding of the Chinese market, to be able to seek advantages and avoid disadvantages.*

KEYWORDS: *Plant-based food industry, Social factors, Vegetarianism*

1. Introduction

Climate State manifests that a major concern of the environment is the methane emissions from stock farming, which is responsible for about 35-40% of anthropogenic methane emissions worldwide. For example, beef production causes 57 times as much greenhouse gas as potatoes for the same mass. Furthermore, the world's population is projected to increase to 9.8 billion by 2050 and many people consider that the population growth will raise meat consumption resulting in more carbon emissions and hindering biodiversity.[1] As more environmental issues are ascribed to overstocking, people start to be aware of the impact of food production on climate change.

To alleviate the problem, plant-based food industry has emerged in many countries. The Plant-Based Foods Association illustrates that during the past few years, the growth of the U.S. retail sales of plant-based foods was about 11% while the total retail food market in the U.S. only had a 2% growth.[2] It indicates that the plant-based food is growing at a very considerable rate and becoming a critical driver of sales growth for retailers.

The US market has already achieved some success in the plant-based food industry, but what about China, the world's second-biggest economy with 1.3 billion people? For Chinese consumers, based on the report by The New Zealand Institute for Plant & Food Research, 39% of Chinese consumers are changing their food choice from meat to vegetables or meat substitutes. Meanwhile, 42% of customers start to buy and consume "healthy or low-risk to the environment" foods.[3] These changes provide opportunities to develop this new industry in China.

The plant-based food industry is burgeoning globally right now. According to Euromonitor, the plant-based food industry currently worth \$18.8 billion and will reach \$22.8 billion in 2024.[4] China is considered as the next target market for entrepreneurs and investors to get on board and being a great potential market for not only the multinational enterprises but also local competitive companies.[5] Many companies like ZhenMeat and Whole Perfect are competing in this area, and they are associated with foreign companies like BeyondMeat. Siu reported that, "In 2018, the market size of the domestic plant-based meat industry was about 6.1 billion yuan reflecting a year-on-year increase of 14.2%".[6] CNBC also forecasts the whole market will be up to \$11.9 billion by 2023.[7] Thus, out of these data, the future of this industry can be bright.

Although the current situation shows that the market has unlimited prospects, there is no specific analysis of the pros and cons of the industry in China. The purpose of this paper is to analyze the current opportunities in the market and point out some obstacles in China that can help people have a deeper understanding of this emerging industry, make the best of it, and solve these problems in the future.

2. Opportunities

Foreign enterprises are exploring the huge market and their experience could make significant efforts to the Chinese market. First of all, two American companies named Beyond Meat and Impossible Foods have already made great achievements in their local market. In the US, the Impossible Burger has served at more than 150 restaurants, and Beyond Burger is selling its plant-based products at over 5000 grocery stores.[8] Witnessing the huge potential for their businesses in China, they have already set off to develop in such a great market. Since Chinese local people's tastes are different from people in the US, and Chinese people have different culinary traditions from Americans, it is inevitable for the foreign companies to make adjustments satisfying Chinese citizens.[9] Thus, they should localize their businesses.

Following up on multinational plant-based enterprises, more local Chinese companies are also entering this new business vigorously. Though they are still in the initial stage, they have a competitive edge over foreign companies since they have a better understanding of local Chinese citizens' tastes. Regarding "Whole Perfect Food", this company has served vegetarian Buddhists for 20 years and created 40 kinds of sausages made out of pea-based protein.[7] Overall, with more efforts being put into the business, it could grow dramatically as it moves along the trends of the world.

Social characteristics interact with the Chinese plant-based food industry simultaneously. From the perspective of short-term social changes, the price and quality of meat will affect the acceptance and purchases of plant-based food. Taking pork as an example, the quantity and quality of pork supply have been affected by the outbreak of African swine fever recently.[10] Due to the impact of the epidemic, in the fourth week of September 2019, the national average price of live pigs in China was 27.58 yuan/kg, which is 94.2% higher than that in the same period in the last year.[11] Consequently, people may not only doubt the safety of the pork but also do not want to pay a high price for it. Meanwhile, as the result of the increasingly fierce trade war between China and the US, the price of beef and other meat products are also rising. Under these circumstances, people are likely to choose more affordable and nutritious alternatives, such as artificial meat in the plant-based industry.

Additionally, as more and more people are pursuing a healthy lifestyle, plant-based food are their priorities. According to the report released by "Keep", which is the most famous fitness APP in China, it has predicted that China will have more than 300 million fitness application program users by 2023.[12] In such a large number of fitness groups, a plant-based diet is needed. In total, this trend of pursuing health may provide opportunities to develop the plant-based food industry.

From the perspective of long-term social characteristics, China is a multi-ethnic and multi-religious country. From the data of Chinese government, China has about 200,000 Buddhist monks and nuns, and more than 21 million Islamic believers.[13] Buddhist believers completely do not eat meat and Islamists do not eat pork. These people may choose to eat plant-based food which can not only preserve their traditional diets but also provide the same nutrients as meat. Generally, these short-term or long-term social factors have the favorable influence on the development of the plant-based food industry in China.

Imitation meat food has existed in China for a long time. For example, "rolled-tofu chicken".[14] Since it is a long tradition for Chinese citizens to take plant protein, it is promising that people in China are likely to accept food produced by plant-based companies. Like other regions and countries, the vegetarian movement in China is led by young people who are very interested in this international novelty, especially the plant-based food.[15] According to the projections, the number of people aged 0-35 will reach 44.6% by 2020,[16] and the education level of this crowd is generally higher and they are more confident about new things, which lays the foundation for the wide spread of the plant-based food industry.[17] Since the per capita disposable income of Chinese residents has increased by 1.8 times from ¥10,977 in 2009 to ¥ 30,700 in 2019, purchasing power has increased, it also raises the possibility for consumers to spend more on plant-based food.[18]

3. Obstacles

As a matter of fact, consumers have presented some characteristics that could indicate the huge potential of the plant-based industry in China, however, there are still some obstacles should be considered.

Currently, the business magnates of the plant-based food industry are countering some technological obstacles. It is challenging for them to mimic the taste, texture, and flavor of meat perfectly. As Vince Lu, the CEO of Zhen Meat, described that its products can only achieve a 70% to 80% level of similarity of animal meats. According to the responses from the customers, they may still think the products taste like beans or the seasoning.[19]

Plant-based food has a positive impact on society, while others argue that it harms people's psychology and physical health. A plant-based food diet may cause social isolation. Those who cannot understand or do not

know how to accommodate the plant-based food diet may exclude people with this diet from social gatherings. The Humane Society found that 84% of people who give up eating animal products eventually revert to their original diet, a meat-inclusive diet.[20] This figure suggests that this kind of diet may not be accepted by the public, which will make the plant-based food industry challenging. Besides, a study found that vegetarians and vegans are at greater risk for vitamin B12 deficiency [21] and another research showed that the bone density of vegetarians was 5% lower than that of people who often eat meat.[22]

Notwithstanding the rapid growth of the Chinese market, some people do not agree to carry forward the industry. The most controversial aspect is the relatively high price of plant-based food. At present, the average price of consumption of 80% of vegetarian restaurants in the market is 60 yuan, higher than most consumers can afford.[23] Some restaurants even charge more. For example, in a famous Beijing vegetarian restaurant, JingZhaoYin, the consumption per capita can be about 400-700 yuan.[24] Such price differences have led some to argue that plant-based food should not be promoted.

4. Conclusion

To sum up, the plant-based food industry, which was born out of environmental issues, is now receiving wide attention. Beyond the increasingly mature U.S. market, investors have set their sights on China. In this huge market, local companies associated with foreign corporations are combating for market shares, which bring big benefits to the development of plant-based business. Even though some technical obstacles are impeding their success, undoubtedly, this whole market has unfathomable potential to realize full success. Short-term or Long-term social factors have a favorable influence on the development of the plant-based food industry in China. The positive effects overweight the negative effects. As a result of the higher education and disposable income received by young people to pursue vegetarianism, they become the main purchasing power of the plant-based food industry. From these aspects, the Chinese market is very potential and can be successful.

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