



The Negative Effects Caused by COVID-19 and in Catering Industries in China

Mijian Han¹, Zehua Lai², and Weihang Zhang³(✉)

¹ Questrom School of Business, Boston University, Boston 02215, USA

² Rady School of Management, University of California San Diego, La Jolla, San Diego 92093, USA

³ Carlson School of Management, University of Minnesota, Twin Cities, Minneapolis 55455, USA
zhan7098@umn.edu

Abstract. The COVID-19 pandemic is one of the worst global health emergencies in modern history. Like many other industries, the restaurant industry has also been attacked hardly by the pandemic. After COVID-19 happened, more than 90% of restaurants were closed following the restrictions of the Chinese government. Most large restaurants lost more than 70% of their total revenue compared to before the pandemic. Small restaurants are facing problems of closing and being unable to pay their employees. Restaurants need to figure out methods to recover and adapt from COVID-19. This article figured out restaurants are supposed to separate tables with plastic covers to reduce the chance of infection; insist on checking the health code query. Restaurants should encourage of take-out services in order to strengthen disinfection work rather than traditional dine-in services. Pandemic not only caused a catastrophe for the catering industry, but also pushed the transformation from dine-in to take-out channel of the whole catering industry. Restaurants are supposed to move forward by following diverse solutions for COVID-19.

Keywords: Food Delivery · Policy · Homogenization · Pandemic

1 Introduction

1.1 Background

While the epidemic suddenly hit the mainland in China, the Chinese government promptly closed many industries that required massive face-to-face contact, such as the foodservice industry. Many restaurants were forced to close, due to strict law enforcement. Thus, their revenues were limited, making it hard to survive under such circumstances. COVID-19 has significantly changed normal living conditions and forced changes in economic and social behaviors without treatment or vaccines. In pursuit of new common sense in people's lifestyles, it has been observed that there is an increasing

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tendency to avoid the consumption of food services that involve physical contact with people. Given that restaurant customers are concerned about the safety issues of overall food consumption, various types of non-contact from restaurants are essential to curb the spread of infection. Due to its importance in the society, it is critical to analyze the COVID-19's impact on restaurants.

1.2 Related Research

Li et al. investigated the resilience and innovation mechanisms in China's catering industry, and used the life cycle model to dynamically quantify the innovative tactics used by Chinese restaurant firms in their emergency reactions and recovery efforts. Bin et al. evaluated the crisis management response model in the Chinese restaurant business and identified two primary stages of the crisis management process: emergency reaction and precautions, and prevention period. Bin et al. emphasized that cooperation is the most important activity for novel crisis management practices, and they provided practical instructions to help industry practitioners implement new activities to achieve crisis resilience [1]. Kim et al. looked at the elements that influence restaurant businesses' financial comeback after being forced to close due to COVID-19. Using an exploratory approach and a formulated model that was estimated using fixed-effects analysis, the Jaewook team confirmed the impacts of COVID-19 pandemic on financial performance of restaurants firms, investigated whether the degree of such impacts was moderated by business restrictions correspondingly, and explored effective quality signaling cues that influence customers' perceived uncertainty risks. In general, Jaewool et al. found that delivery contributes to restaurant sales regardless of the limits imposed by the city [2].

Zhang et al. analyzed differences and changes in consumer preferences and consumers under COVID-19 based on catering review data from five cities in China from August 2019 to April 2020. The team of Chenyu made the sentiment analysis by utilizing Latent Dirichlet Allocation (LDA) topic analysis and SNOWNLP to complement emotional analysis. In general, Chenyu et al. pointed out that consumers focused more on the changes of dishes, dining environment as well as epidemic prevention. Consumers' emotional state was more active after COVID-19 compared to before [3]. Lam et al. made a report based on a local family cluster of six confirmed COVID-19 cases among 29 people who attended a Chinese New Year family dinner gathering in a restaurant on 26th January 2020. The team of Tsz-sum conducted an epidemiological investigation of this confirmed case of COVID-19 and pointed out that the Family dinner was the only specific contact of all six confirmed cases during the incubation period on 26th January 2020. In general, this research supported pre-symptomatic spread and efficient human-to-human transmission of COVID-19 through social activities. The public is advised to keep social distance during the COVID-19 pandemic [4].

Song et al. analyzed how the financial conditions, corporate strategies, and ownership structure of different U.S. restaurant firms led to their inconsistent impact of the COVID-19 shock. To do so, Song et al. examined the changes in share prices of individual companies and the growth rate of the overall U.S. population of new restaurant patients. Ultimately, it was concluded that in a depressed restaurant market, the stocks of larger and more highly leveraged companies declined less compared to smaller ones. More importantly, Song et al. conclude that internationalization is the only means of control

to enhance market confidence in the company [5]. Wang et al. studied how consumers adapt their social interaction behaviors to the spreading of the COVID-19 pandemic. Wang et al. analyzed the footprint of American consumers and found the differences in the elasticity of restaurant visits in Amer before and after the widespread vaccination of the citizens. This study finds that restaurants with high social interaction indices would receive a greater impact as COVID-19 starts spreading compared to others. However, they also recover faster to the end of quarantines [6].

Zhong et al. researched that COVID-19 greatly diminishes consumers' faith in the catering industry as consumers might face tremendous mental pressure because restaurant visits expose them to the potential threat of COVID-19. Therefore, Zhong et al. suggest that it would be necessary for restaurants to consider and take on the emotion of their consumers in order to recover after the pandemic [7]. Wen et al. analyzed dozens of case studies over the change in Chinese' behaviors because of the pandemics in the past. One of the most important parts is that Wen et al. concluded from another reading that after the times of spreading of SARs in 2003, many Chinese changed their preference of sharing food in one plate toward consuming food with personal plate to prevent the spread of virus [8].

Ma et al. made a detailed quantitative analysis of the effect of the COVID-19 epidemic on the Chinese economy, namely the "fearonomic effect." Such a pandemic is estimated to cost China 283 billion dollars. There is a significant decrease in entertainment businesses such as restaurants and movie theaters, costing around 106 billion dollars, and reduced public transportation by around 96 billion dollars. Since many foreign export trading areas have been shut down due to Chinese government restrictions, many supply chain disruptions have reduced the demand in China, and even financial volatility, leading to many bankruptcies in Mainland China [9]. Zhang and colleagues analyzed the impact of the COVID-19 pandemic on China's macroeconomics and agri-food system is investigated, with policy recommendations made. COVID-19 has had a significant impact on both the macroeconomic and agri-food systems, according to the research. If export demand does not return, China's GDP will grow at a rate of less than 1% in 2020. After export demand rebounds, growth will accelerate to 1.7%. Although China's economy is improving, the virus has expanded worldwide since early March. According to the most recent WTO estimates, COVID-19 had spread to 215 nations as of May 6, 2020, with approximately 3.6 million confirmed cases and over 247,000 deaths. The Chinese economy is strongly reliant on export demand, and the crisis has exacerbated this dependence [10].

Ozbuk et al. figured that the epidemic had impacted all aspects of the global food supply system. Because of the temporary or permanent closure of hospitality and catering operations, the problem of food waste has grown even more acute. Households produced FW as a result of many people being forced to work from home, a practice called as "remote working." Because of this new working technique, most households are now paying much more attention to the "healthiness" of their dietary choices. As a result, there is a rise in domestic frugality and thrift. Food purchases soared at the start of the epidemic, but the amount of food wasted dropped after that. A poll found that resourceful planners and cooks made up 55.77% of the sample. They had the greatest health orientation and fitness scores [11].

1.3 Objective

The article analyzes several methods based on problems that restaurants face in China to help restaurants recover and move on from the negative effects of COVID-19. The article shows specific negative effects on restaurants in China caused by the pandemic from three macroeconomic perspectives, restaurants' revenue, and the catering industry's unemployment. Then, the article includes three main issues that restaurants are facing during the pandemic. After that, the article provides feasible solutions based on the three main issues above from the perspectives of government, food delivery platforms, and products.

2 Effects Caused by COVID-19

2.1 Macroeconomy

The first half of 2019 is a nightmare for everyone around the world, as the dramatic spread of COVID-19, a highly infectious respiratory virus, negatively affected everyone. Restaurant industry, especially in China, as China first identified such a virus and implemented a series of preventive measures, was greatly affected by the global pandemic. In general, the isolation of people in their homes due to the epidemic and the reduced desire to go out and spend money has hit the restaurant industry in China to a significant degree. Although some F&B companies have started to try to make changes to accommodate people's new needs in the wake of the epidemic, it is easy to see that these efforts are barely causing any changes under the current circumstances.

2.2 Revenue

According to Zhong et al. research, the spread of COVID-19 raises great mental stress among consumers, because each restaurant visit will expose them to the potential threat of COVID-19. Therefore, Zhong et al. suggest concluded that it would be important for restaurants to consider and take care of the emotion of their consumers in order to recover impact from the pandemic [7].

Ma et al. made a detailed quantitative analysis on the effect of COVID-19 epidemic on the Chinese economy, namely the "fearonomic effect." Such pandemic is estimated to cost China 283 billion dollars [3]. Since many foreign export trading areas have been shut down due to Chinese government restriction, many supply chain disruptions reduced the demand in China, and even financial volatility, leading to many bankruptcies in Mainland China (Fig. 1).

With the data gathered from the National Bureau of Statistics, the table above shows that both total turnover of the catering industry and chain restaurants had decreased from 2019 to 2020. According to the research presented by Du et al. in 2020, the total revenue of the catering industry is 4672.1 billion yuan in 2019 and 15.5% of revenue was created during the Spring Festival. Nevertheless, COVID-19 caused serious damage during the Spring Festival of 2020. There are 78.8% of the restaurants decreased more than 100% of their total turnover. What's more, only 5% of restaurants decreased about 70% of their total turnover. Moreover, 93% of catering companies chose to close their stores.

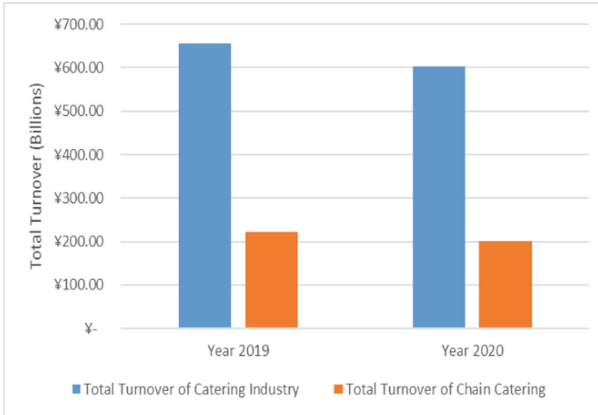


Fig. 1. Total Turnover of Catering and Chain Catering industry from 2019 to 2020

Among them, 73% of enterprises closed all their stores; 8% of enterprises closed more than 80% of their stores; 7% of enterprises closed less than half of the stores. Most of the large catering companies had been attacked seriously by the effects of the pandemic. Recent research showed that WangShunge, one of the most famous Beijing food, had opened only 23 out of 60 stores during the vacation of Spring Festival in 2020. Their passenger flow had decreased 98.49% and the turnover ratio decreased by 93.77% from last year. Another example, HaiDiLao Hotpot, one of the largest catering companies in China, had decreased more than 1.1 billion yuans during the Spring Festival in 2020 [4].

2.3 Unemployment

The restaurant industry has changed methodology of service, adapting the negative affect brought by COVID-19. Small restaurants always face the most impact, as they don't have a dedicated safety professional, and the responsibility lend towards to owner. Employees must follow new and different rules, changing gloves or wearing masks, potentially involving employees to quit the job due to complicated restrictions. According to the report released in September 2021, CEIC data, employees in the Chinese foodservice industry quit rate in the foodservice industry has grown to 6.2% in February, 2020, where COVID-19 just erupted [2]. Due to the underlying economic downturn and shortness of labor, many small restaurants are forced to shut down.

3 Problems

3.1 Policy

While the epidemic suddenly hit the mainland in China, the Chinese government promptly closed many industries that required massive face-to-face contact, such as food service industry. Many poor risk resistances of small and micro catering enterprises, especially for some small restaurants, is a disaster of extinction. The city of

Wuhan, during end of February, where coronavirus just erupted, was first to be locked down, affecting more than 9 million citizens. Small restaurants faced the burden to pay the rent, taxes, wages, and even social security fees while zero revenue had been generated. The rent and taxes in centralized cities, such as Beijing and Shanghai are even more expensive, which accrue as a big cost. More importantly, all restaurants faced the problem that many foodstuffs were spoiled and expired in the inventory backlog. This occurred as a big problem for restaurants because they did not gain any revenue, and the previous cost of purchasing food ingredients could not be recovered. Under such circumstances, small businesses can easily collapse from a significant crisis, such as the COVID-19 pandemic. The restaurant industry appears particularly vulnerable to a long crisis. For such industries, the chance of survival substantially decreased from 76% to 15% [2]. The chance of survival for restaurant entrepreneurs with a specific probability of survival relative to the duration of the crisis is substantially critical [11, 12].

3.2 Food Delivery Platform

Although more than 93% of restaurants had been closed, the food delivery market had been stimulated a lot. According to the research presented by an in 2021, the number of online food delivery users in China has reached 456 million, and the operating income of food delivery has reached 811.94 billion. Both users and revenue have achieved huge growth during the pandemic period. The catering industry began to spend more time researching the development of online production and cooperation with food delivery companies. Small and middle restaurants began to combine dine-in and takeaway as their various sales channels. Nonetheless, not all restaurants received more benefits compared to their original selling channels. Without deeply understanding the operations of the food delivery market, some traditional restaurants that just transformed from dine-in channels lost plenty of their original customers and hardly benefited from food delivery products. What's more, the high commission fees from food delivery platforms made small and middle restaurants who have low turnover rate to adapt online products. Even though the official commission fee from two largest takeaway platforms which are Meituan Delivery and Ele.me is around 6% of total revenue. Nevertheless, the actual commission fees from Meituan Delivery and Ele.me to these small and middle restaurants can range between 10% to 20%. The high commission fees from platforms pushed more press to the catering industry.

3.3 Homogenization

Before considering the impact of COVID-19 on China's restaurant industry, we should first consider the unresolved problems inherent in China's restaurant industry. The restaurant industry, in general, has a reasonably low barrier to entry, so it is easy for new businesses to enter the market and pirate other businesses' best-selling items. One example of this is internet celebrity restaurants, which typically spend a lot of cash flow to advertise their dishes or restaurant features on social media. However, such a case with much focus usually leads to a series of similar restaurants appearing for a short period of time and then declining rapidly as consumer attention declines. As a result, the Chinese restaurant inevitably eventually homogenized and left the vast majority of restaurants, especially

those of a small to medium-sized non-chain nature, being considered as highly substitutable. This problem is most visibly reflected in the rapid decline in the percentage of spending at small and medium-sized restaurants as reputable large chain restaurants capture that share. Another problem with homogenization is that small and medium-sized restaurants are trying to attract customers by keeping unit prices low, making profits very flat, and leaving little room for manoeuvring. And suppose these restaurants want to stay open during an epidemic. In that case, they must invest in more ongoing expenses for epidemic prevention and control, including but not limited to alcohol, disposable tablecloths, and divider plates. This additional overhead broke the fragile balance of profit and cost. It caused many small and medium-sized restaurants to lose their main competition to the big companies in terms of the unit price of dishes [9, 13].

4 Solution

4.1 Protection

While Chinese government remains to implement strict rules on quarantine policy, citizens are expected to follow the rules, eliminating the risk of exposures. Restaurants could innovate some new ways within its private space to reopen the restaurants as well as having no interference with government policy. The spread of COVID-19 occurs via airborne particles and droplets. As a result, the restaurant should first be implemented strict rules on avoiding airborne particles and droplets spread. First of all, they could separate each table by using transparent and plastic cover. This act greatly reduces the chance of droplets transmission and further spread of COVID-19. Plastic cover has low cost and could be purchased in a convenient way for any type of restaurants. Secondly, any restaurants should insist on checking consumer's and employee's health QR code. This is the most efficient way for restaurant manager to quickly have a grasp on consumer's health condition. Consumers and employees would not be allowed of entering the restaurant if tested positive of COVID-19. Such action causes the restaurant into a transmission area and should be closed again. Thirdly, the restaurant should encourage of taking out rather than dine in, corresponding to the government's policy. Such action furthermore reduces the risk of increasing exposure between people dining in. Lastly, restaurant managers should reinforce the policy of sterilizing utilities and tables for consumers. The risk of spreading COVID-19 would greatly reduce with efficient and effective disinfection work.

4.2 Decreasing Commission Fee

The high commission fee collected by food takeaway platforms caused restaurants that had to turn their traditional business into online businesses hard to get a positive revenue during a pandemic. In April 2020, the Guangdong Catering Service Industry Association issued a letter of negotiation to Meituan Delivery. The letter proposes two major demands which are reducing commission rates and stopping exclusive platform restrictions. However, after Meituan Delivery presented its annual report, more than 80% of the restaurants' total revenue are spent on the salaries of delivers. Thus, reducing commission fees in different periods of the pandemic is essential to satisfy both sides. Meituan

Delivery and other food takeaway platforms are supposed to decrease their commission fees to the bottom of their charging range which is 10% when cities have a middle or high risky level of the pandemic. Then, they are supposed to return back their commission fees within 10 to 20% when cities have a low risky level of the pandemic. Moreover, restaurants that have limited online selling experience should figure out their target groups of customers. Most customers of food takeaway markets are between 18 to 30 years old. Restaurants need to confirm their locations, the average price of each customer, and their food categories. It is crucial to present related food products with corresponding customers in order to improve their total revenue.

4.3 Internal

Since the beginning of the epidemic, many people who have been isolated at home have been left to cook for themselves. However, people often find that the food they cook cannot compare with food from outside restaurants. Such comparison is likely to significantly increase the desire to go out and consume food. Therefore, small and medium-sized restaurants, in particular, should offer special food that customers cannot consume elsewhere. Second, considering that many well-located stores surrendered their leases at the peak of the epidemic and that rents in some locations with high foot traffic are now lower than before the epidemic. Small and medium-sized businesses should consider changing the location of their stores to attract more customers. For example, more people are centralized at bustling shopping centers. Such location would attract more customers and gain a bigger revenue.

5 Conclusion

This article discusses the impact of the COVID-19 epidemic on China's restaurant industry. At the start, the impact of the epidemic on the Chinese restaurant industry in general was analyzed from a macro perspective, but further investigation attributes the phenomenon to more nuanced causes including, but not limited to, restaurants' unbalanced current account during the quarantine, the transition from traditional catering to food delivery, and low resistance to stress in the underdeveloped market. This paper argues that the potential solutions to the epidemic shock now lie in more flexible policies that are friendly to the Chinese restaurant industry and in the upgrading and specialization of restaurant companies. Overall, although the impact of the epidemic has caused great damage to the Chinese restaurant industry, it is an opportunity for the Chinese restaurant industry to escape from the problems of the past and to upgrade its industry to a more mature market.

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