Takeout Platform Uses Big Data for Price Discrimination—Meituan Takeout Platform Case Study

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Abstract

In the era of big data, more and more take-out platforms use algorithms to analyze customer data. These algorithms will enable users to retrieve items that are more suitable for them, and also accelerate the speed of their receipt of goods, so that users can get a better shopping experience. However, the takeaway platform uses these data to implement price discrimination through algorithms, and treats different users differently, thus damaging the rights and interests of consumers. The price discrimination based on big data algorithm has the characteristics of concealment and complexity. Therefore, there are certain difficulties in the governance of this behavior, which requires the joint efforts of the national legal department, take-out platform and consumers.

Keywords: takeout platform, price discrimination, big data

1. Introduction

The impact of the epidemic has become smaller and smaller, but the epidemic has had a great impact on people's lifestyle, such as the increasing popularity of non-contact distribution. As a matter of fact, China's takeout industry has begun to develop many years ago. But it is far from convenient and fast. In order to enhance market competitiveness and provide better services to attract users, the take-out platform is gradually developing towards a more intelligent and accurate direction. People enjoy the convenience brought by the intelligent development of the takeaway platform, more humanized application experience and faster delivery time. However, is that all the convenience brought by the intelligent takeout platform? Does the algorithm of the platform have hidden damage to consumers? In December 2020, Mr. Xiao, a netizen from Beijing, shared an experience on Weibo (Chinese version of twitter). In order to enjoy the benefits brought by the platform's membership, Xiao paid for Meituan (one of the largest takeout platforms in China)'s members and found that after becoming a member, the platform distributed coupons to him, which could reduce part of the bill when paying, but the delivery service fee has increased from 2 Yuan to 6 Yuan, he felt cheated by the platform. He also shared when he complained to Meituan customer service about the price increase, how did Meituan

official replied to him. This blog comes a trending topic on the Internet. (Xiao; cited in Cheng, 2020) Finally, Meituan made a statement of shirking responsibility in order to calm down the negative news. Therefore, this paper believes that on the other hand, while the take-out platform has become more and more intelligent, it has brought convenience to customers, sometimes it has also damaged the rights and interests of consumers. The takeaway platform will make use of big data analysis to make pricing unfavorable to existing customers. The government and society should take measures to restrict the use of big data for price discrimination.

2. The Background of Price Discrimination in the Platform

2.1 Development of Takeout Platform

In the early stage of the development of China's takeout industry, there are many takeout platforms. The rapid development of the takeout industry has also attracted the attention of capitalists. Some takeout platforms have strong capital injection behind them. With their strong strength, these platforms can have more delivery staff, attract more restaurants to join, and most importantly, develop more powerful takeout platforms Algorithm to maintain the operation of the platform. These powerful platforms beat other platforms through competition and merger. Now China's two largest takeout platforms account for the vast majority of China's takeout industry, that forming a duopoly situation. One is "Meituan", the other is "Ele.me". Meituan platform works closely with Tencent, which has the most popular social software Wechat among Chinese. "Ele.me" it is controlled by Alibaba; Alibaba is China's largest online shopping website Taobao and payment platform Alipay's parent company. Alibaba and Tencent, the two largest Internet companies, all have about 1 billion active users. In the first paragraph of the article, what Mr. Xiao's story involves is the Meituan platform. Meituan platform can pay to become a member of the platform, and the platform claims that members of the platform can enjoy more discounts when shopping. Mr. Xiao is a loyal user of Meituan app. He often uses this platform to order food. In order to enjoy the discount, Mr. Xiao opened Meituan app members at the price of 15 Yuan in early December, and obtained five 5 Yuan coupons, which is equivalent to using one of the next five meal coupons, saving about 10 Yuan in total.

However, Mr. Xiao did not expect that after he paid to become a member, the delivery fee of the restaurant he bought before changed from 2 Yuan to 6 Yuan. Mr. Xiao fed this phenomenon back to Meituan customer service, who explained to him that the delivery cost would be affected by the time period, weather conditions, number of passengers and transportation capacity. However, careful Mr. Xiao in the same place, at the same time, the same meal, the same receiving place and then log in a non-member's account, the delivery fee has become 2 Yuan. He became very angry and sent two screenshots of different prices to Meituan customer service. He asked Meituan customer service to explain again. The reply he got was that he could only compensate Mr. Xiao 10 Yuan, but Mr. Xiao said he couldn't accept it. So he sent this article to expose the price discrimination of Meituan takeout app (Xiao; cited in Cheng, 2020). This article has attracted hundreds of millions of readers in a short time. Many netizens have posted their messages, most of them describing the price discrimination they experienced. For example, when they buy takeout, they find that ordering through IOS phones is more expensive than Android phones, and regular customers are more expensive than new customers. These cases all point to the algorithm of Meituan platform.

2.2 The Value of Data to the Platform

Takeout platform needs a lot of data support. As platform capital (Srnicek & Nick, 2016) says, data is like oil. It is a substance that needs to be extracted, refined and used in various ways. The more data a company has, the more it can use it. As the number of users increases and time goes on, more and more data are recorded, including sellers, buyers and passengers. Seller data includes store type, transaction volume, evaluation, etc. Buyer data is the buyer's transaction preference and address information. In the process of transportation, the position data of the rider, the working status and strength of the rider are also the information that the platform needs to collect. The takeout platform will analyze these data, optimize the algorithm, make the platform more intelligent, refined, and obtain more profits. As Taddeo said, in today's world, artificial intelligence supports services, platforms and devices that are ubiquitous and used daily (Taddeo et al., 2020). The Chinese government is also actively promoting the development of AI technology. In

July 2017, China's State Council released the country's strategy for developing artificial intelligence (AI), entitled 'New Generation Artificial Intelligence Development Plan'. This strategy outlined China's aims to become the world leader in AI by 2030 (Roberts et al., 2020). Meituan platform, which has received policy support, has also actively developed an artificial intelligence processing system called "Super Brain", which has been updated to the fifth generation. It can process tens of millions of orders in one day (Meituan, 2017).

Of course, the intelligent and refined distribution service from Meituan platform really brings great convenience to customers. The convenience that can improve the quality of life can make users more dependent on this platform. This has laid a foundation for the platform to better earn the benefits of customers in the next step. These conveniences involve all roles of Meituan platform, including restaurants, customers and takeaway riders. First of all, the platform will push products that may arouse the customer's interest to this person according to the customer's recent search records, purchase records, age, region and other information. When customers open the app to select products, they can save more time and use the Meituan takeout platform app more efficiently. Personalized push service will also push more reasonable amount of food according to customers' usual eating habits, so as to reduce food waste and avoid customers' overeating. The more frequent customers use apps and interact with the platform, the higher the accuracy of personalized push. Second, with the support of the navigation company, the platform can obtain regional traffic information, weather conditions and other relevant data, and plan the rider's meal delivery route through the "Super Brain" precise algorithm. Such technology application can save meal delivery time and give customers a better shopping experience. What is most closely related to customer satisfaction is the customer experience of humanized application and shorter meal delivery time. The platform makes the platform more accurate and intelligent through big data and other technologies, and the dining experience of customers is getting better and better. In an interview, Wang Xing, the CEO of Meituan said: "our slogan is 'Meituan takeaway delivery everything fast.' Our goods usually arrive within 28 minutes." "It's a good technology application," he continued. This interview was published in one of the China's most widely read magazines, Renwu (2020; cited in Chuang, 2020).

2.3 Why Does the Platform Conduct Price Discrimination

Meituan delivery platform has invested a lot of money in intelligent development, and of course, it also hopes to get high returns. As Leonelli (2017) described, whether in government or in academic research and industry, large companies with large capital and technical resources are leading the development and application of data analysis tools, making other social groups the recipients of innovation in this field. In order to achieve this goal, the primary task of the platform is to improve the market share. In order to compete with the "Ele.me" platform, Meituan must be able to attract more customers. However, at present, the cost of attracting customers is very high. Regular customers have user stickiness on the platform and are not easy to lose. Therefore, the platform will invest more resources and funds into new customers to maintain a strong market position. That's why the platform treats new and regular customers differently. Of course, not only takeout platforms, but also other Internet companies have price discrimination, such as mobile phone operators, taxi software, air ticket booking software and so on. As early as 2000, there were reports about price discrimination by using big data. At that time, an Amazon user reported that the price of previously viewed DVD products dropped from $26.24 to $22.74 after he deleted the browser's cookies. (Rosencrance, 2000) In 2018, "using big data to analyze product pricing that is not good for existing customers" has even become one of the top ten buzzwords in Chinese social life. In March 2019, the Beijing Consumer Association held a press conference and released the results of the "price discrimination" questionnaire. The consumer association pointed out that 88.32% of the respondents thought that "big data price discrimination" was common or very common, and 56.92% of the respondents said that they had experienced "big data price discrimination". The Meituan platform event in 2020 has become a hot topic of online discussion. It is only through such a typical case that people resonate. Too many people have had similar experiences.

3. How to Deal with Price Discrimination on the Platform

So, why does such a wide-ranging and long-standing problem continue to occur in such a developed society? Using big data analysis for price discrimination is very hidden, which is usually difficult for customers to detect. Even if customers vaguely feel cheated by the platform, it is difficult to collect evidence. At the same time, as a trade secret, it is impossible for enterprises to disclose their specific data and algorithms to the society, and it is difficult for the government to supervise and manage the platform. Whenever there is suspected price discrimination, the companies involved will deal with it in the same way as Meituan platform. Through various excuses, including giving coupons, different network positioning, different actual road conditions and other factors, it can be explained that different customers will have different prices. At the same time, it denies that the platform does not treat different customers differently. In this case of opaque and information asymmetry, the use of big data for personalized price discrimination is becoming more and more common. Another reason is that Meituan platform is in an oligopoly position in the market and has an absolute advantage over consumers. As the book platform capital (Srnicek & Nick, 2016) says, the more users on the platform, the better the algorithm. This forms a cycle, and the platform naturally tends to be monopolized. Meituan company has strong capital support, huge user groups and contracted businesses, which can beat other platforms through high-quality service and low price. Now, there is only one similar product in the market that can compete with it. As a platform in a strong position in the market, sometimes it will take unfair competition means against other platforms, forcing a restaurant to join only one takeout platform instead of another. For example, if a restaurant wants to join Meituan takeout, Meituan will force it to sign an agreement with the restaurant to prohibit it from joining the "Ele.me" platform, otherwise the restaurant will be punished by Meituan platform. As time goes on, their status becomes more and more stable. The two oligarchs adopt such unfair competition means, which makes it difficult for customers to compare the price of other apps when they choose a restaurant to buy food. You can only choose the platform that supports the service of this restaurant. Due to the lack of competition, the price discrimination of big data will be more

and more serious, but it will be more and more difficult to detect.

Such negative news certainly made Meituan platform be attacked by the whole society. In the stock market, the market value of Meituan plummeted by more than 3%, and the market value of 40 billion yuan rose instantly. This also shows people's rejection of price discrimination. How to deal with this phenomenon is a big problem. Like the privacy issue described by platform society, price discrimination has always been the focus of debate among platform owners, national regulators, regulators, citizens and lawyers. For each application in each specific domain, in each social context, it needs to be evaluated on a case by case basis. (Dijck et al., 2016)

For the delivery platform like Meituan, in order to effectively curb the use of big data for price discrimination, it needs the strong intervention of regulatory authorities, improve the laws and regulations, and improve the punishment measures for price discrimination. From the perspective of government intervention, it is difficult for the government to interfere in the data and algorithms of the platform, but the government can support some firewall software similar to antivirus software to protect the user's data. From the perspective of legislation, the state should improve the laws and regulations related to big data and algorithms. At the end of 2020, in order to make these platforms abide by the principle of market equity and safeguard the rights and interests of consumers, some local governments in some regions of China have also taken some measures. For example, Guangzhou Municipal Bureau of market supervision and administration and Guangzhou Municipal Bureau of Commerce specially held a research and administrative guidance meeting. At this meeting, Meituan platform and "Ele.me" platform has signed the "letter of commitment for platform enterprises to maintain fair competition market order", which includes not illegally collecting and using consumer personal information, not using the data advantages of existing customers, and "using big data to analyze the disadvantages of pricing to the market" (Equalocean, 2021). To a certain extent, signing the letter of commitment maintains the market order, but in essence, the letter of commitment has no legal effect. In other words, although these enterprises have signed relevant commitments, if they violate these commitments,

they cannot be punished. Therefore, it is imperative to establish a national law on big data application to regulate the behavior of the platform. From the discussion in front of the article, we can see that the platform's price discrimination by using big data is related to the monopoly trend of the platform, so we must crack down on the monopoly behavior of the platform. In recent years, the Chinese government has intensified its anti-monopoly efforts, especially in the case of "banning market-oriented platforms" and restricting traders from trading with or with designated operators without justifiable reasons. Since 2021, Meituan platform has been punished by courts in Zhejiang Province and Jiangsu Province for violating the monopoly law. In April 2021, Alibaba Group (The holding company of "Ele.me" platform) was fined 2.3 billion euros by the Chinese government for its monopoly. But there are still a lot of monopoly behaviors of these platforms that have not been punished. Under the supervision of the government and the public opinion of users, the obvious price difference of Meituan takeout in 2020 will be rare, and the form of platform price discrimination will be more and more cunning. For example, the price discrimination of some platforms is not directly in the form of superficial price, just like issuing different value coupons to new and regular customers. Consumers themselves need to learn to protect their rights and interests. When they buy goods on the takeout platform, they need to compare the prices and service charges of several companies, which will enable the system to identify price sensitive consumers. Then they need to learn to protect their privacy and close the unreasonable rights in the application. Finally, if they find evidence of price discrimination using big data, they need to retain the evidence and report to the government and the media in a timely manner.

4. Conclusion

As a conclusion, while we enjoying the convenience brought by the intelligent progress of the takeaway platform, we must also pay attention to the infringement of price discrimination on consumers' rights and interests caused by the big data application of the takeaway platform. People's tolerance of price discrimination by using big data is very low, but when consumers vaguely feel that they may be discriminated by taking out platform

using big data, it is difficult to find sufficient evidence. The platform shirks all responsibility to intelligent algorithm. The monopoly of the platform will also make the exploitation of consumers more serious. This problem needs the joint efforts of the government and society. When formulating the national AI development plan, the government should not only pay attention to how to develop science and technology, but also pay attention to the ethical issues behind the application of big data, improve the big data application platform method, and improve the ethics of science and technology enterprises. The society also needs to play the role of public opinion supervision on the platform to realize the diversification of takeout platforms and maintain the competitiveness of various platforms. These methods can effectively inhibit the price discrimination from the platform.

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