

Analysis on Price Discrimination in Real-world: China's Cases

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Abstract: This article aims to incorporate real-life examples of companies into the theory of price discrimination. With regards to price discrimination, inspiration can be gained from analyzing results from different viewpoints. Through analysis, it can be said that price discrimination occurs in people's daily lives in a very subtle way. By separating the link between some companies' actions and rule-setting, many basic principles of price discrimination can be found. Consumers may not notice it unless they are very attentive. Companies will always use different methods to divert consumers' attention to other areas. Additionally, with technological growth, some online companies have a higher ability to engage in first-degree price discrimination, which is quite difficult for traditional offline companies to achieve. The Chinese government has not officially declared this phenomenon illegal. In summary, consumers' experiences will be negatively and seriously impacted, and more relevant policies against price discrimination need to be implemented by the government. However, balancing the prevention of price discrimination and ensuring that normal price differences exist is a difficult issue for the government.

Keywords: price, discrimination, DiDi, Pinduoduo

1. Introduction

The most important and obvious characteristic of price discrimination is that different consumers are sold the same or identical goods at different prices, and the difference does not reflect differences in costs [1]. Nowadays, with the rapid growth of the economy, the widespread use of big data, and more mature marketing strategies, pricing strategies are becoming increasingly important and well-considered. While companies generally view it as a tactic, many consumers sometimes condemn it as unfair treatment. Many past studies have discussed price discrimination in both theoretical and practical ways. For example, how price discrimination can be used to gain abnormal profit [2], how the definition of price discrimination can be set qualitatively [1], and how to analyze price discrimination from consumption behavior by experimentation [3].

Although price discrimination is mentioned in many essays, the connection between the theory of price discrimination and practical examples of price differences is not well explained. Moreover, how the theory of price discrimination, after analysis, can be applied in real life to give advice to different entities is also a meaningful topic. Therefore, economic principles will be used in this paper to explore how companies exhibit and hide the characteristics of price discrimination when making prices for

different consumers in reality. Through case analysis, possible impacts and different subjects' countermeasures relative to price discrimination will be drawn.

This paper aims not only to practically use the theory of price discrimination in the analysis cases but also to draw some possible effects and give relevant advice to different entities. Enterprises can then improve their price strategy to achieve more acceptable profits. Consumers, after understanding the basic logic and process in case analysis, can have feasible suggestions to prevent price discrimination in daily life. Regulators can also receive policy advice on considering the effects of both the company and the individual and protecting if necessary. Overall, this can further promote the steady and healthy development of the economy.

The main body of this paper includes two parts: case analysis and measure suggestions. The case analysis part will first clarify the definition and type division of price discrimination in economics, and then select two famous examples in China for theoretical analysis and impact prediction combined with economic theories. The advice part continues the theoretical conclusion of the case analysis and provides extension advice to different entities based on the effects.

2. Case Analysis

2.1. Definition and Types

Price discrimination can be classified into three degrees.

The first degree suggests that each consumer will be charged a different price, which is the highest amount that each person is willing to pay [4]. The second degree suggests that companies will set different prices based on the quantity of goods purchased [4]. For example, the first cloth is full price while the second is half price. The third degree suggests that different prices will be set based on consumers' price elasticity [4].

2.2. DiDi Case

DiDi Global Inc. is the world's leading mobile technology platform, offering a wide range of app-based services across global markets [5].

DiDi has become the largest and most popular taxi service platform in China. Although there are other small taxi platforms, they cannot compete with DiDi in the taxi-service market in terms of market capitalization rate, users, and drivers.

Reporters from the Consumption Electronic Journal placed two different orders to the same destination and service using two different accounts on two phones simultaneously [6]. One order was placed on the DiDi application, and the other was placed on the DiDi mini-application in WeChat. The prices were 28.1 RMB and 19.5 RMB, respectively, representing a significant price difference. Additionally, the account used on the DiDi application had been used for a long time, while the account used on the mini-application had not.

In this case, third-degree price discrimination is more suitable because downloading and using applications directly is more convenient for high-frequency users. Thus, consumers who download the DiDi application have higher demand for DiDi service and are regular users when facing transportation needs. These regular users have lower price elasticity because DiDi services are essential to them, and they do not have many alternatives to choose from when faced with a price change. Therefore, DiDi charges them a higher price to take advantage of their low-price elasticity character. On the other hand, those who place orders on DiDi's mini-application on other platforms do not have as high a demand for DiDi service. Since DiDi services are not essential to them, and they have more transportation alternatives, they have higher price elasticity. To be competitive among all platforms and enhance the market capitalization rate, DiDi offers these consumers low prices initially to attract them to place orders in the long term. Thus, DiDi uses third-degree price

discrimination based on consumers' different price elasticity to compare these two different groups of consumers.

DiDi's technology officer officially declares that DiDi does not use price discrimination against consumers [7]. He also claims that the price difference might be caused by several factors, such as the timely updated transportation on the map and the different coupons listed on the different phones. The government has not yet investigated or officially commented on this phenomenon.

2.3. Pinduoduo Case

Founded in 2015 by PDD Holdings, Pinduoduo started as a fresh agriculture platform before expanding to become a leading social commerce player serving approximately 900 million users [8]. Pinduoduo has become one of the major digital shopping platforms in China. Its major competitors are Taobao and Jingdong. One of the strategies adopted by Pinduoduo is to have a low-profit margin by lowering prices and enhancing sales volume through marketing and discounts.

Price discrimination is a popular phenomenon on Pinduoduo. Second-degree price discrimination is very obvious in many goods since it incorporates quantity character into prices. For example, the product Y sold on Pinduoduo was quoted at 33RMB per box while the second box, if bought together, only costs 30RMB [9]. Thus, the rudimentary form of second-degree price discrimination sells different prices of product Y per box in different quantity levels. Other forms of it can be coupons with threshold restrictions in the same online store, since this coupon gives you a discount only when you buy enough quantity of goods in the same store.

However, Pinduoduo nearly engages in first-degree price discrimination in a hidden way. The most famous example is during Single Day deals. Single Day's Deal is a festival in China, and many shopping malls, including online and offline, with nearly all categories of goods, will have a special discount event during the period. However, the rules of Single Day deals on Pinduoduo and other platforms are very complex. If consumers want to get a high discount on that day, they need to spend a lot of time analyzing the rules and completing many different tasks.

To illustrate, imagine that some customers want to buy product X, and the normal market price is 400 dollars on the Pinduoduo platform. Different consumers will receive different treatments during Single Day deals on the Pinduoduo platform due to their varying purchasing power. The consumers with the highest purchasing power, referred to as segment A, may not care about the cost at all. They may not wait for the Single Day deal and buy the product at the normal cost since their budget is higher than the cost. Consumers in segment B have a middle level of purchasing power but still want to save some money in the deal, like 50 dollars. Then, they need to spend some time analyzing the rules to gather suitable coupons for that day. Consumers in segment C have the lowest budget and need to spend many hours analyzing the discount rules to fully exploit this opportunity and save the most, like 100 dollars. Besides, segment C consumers also need to complete many different tasks, such as sharing with friends, watching advertisements, and playing games (these tasks can be a way of marketing) one month before the day of deals since those tasks are always challenging to complete.

From the example, it can be found that C consumers are willing to spend a large amount of time to save a relatively small amount of money, which is because of their low purchasing power and budget. In other words, among these three kinds of consumers, C consumers have the highest price sensitivity, and they cannot afford to buy good X without a single day's deal. In that case, good sellers cannot earn their money without these deals. However, with complex rules, Pinduoduo can accurately find the consumers who belong to this category since they always spend a large amount of time on the rules. Besides, with this deal, the seller successfully earns their money although they are offering lower prices. Compared with the ordinary situation that earns nothing, this situation is much better. Thus, Pinduoduo successfully increases its sales volume by lowering the price for target consumers. With the same logic, Pinduoduo can also classify consumers A and B. Those A consumers do not

care about the discount at all. Thus, they have the lowest price sensitivity and do not gather many coupons. Pinduoduo will take advantage of this and exhibit prices with the smallest discount to gain more marginal profits on them. For B consumers, their price sensitivity is in the middle range, and the price set will be in the middle.

This process is tricky since it is hidden by complex rules from the consumer's perspective. Furthermore, the prices received by different consumers will be normally contributed to the coupon difference gathered. Thus, not many people will notice the hidden logic. However, Pinduoduo has accurately segmented consumers in this way and set different target prices to exploit more overall profits.

Although the above example has only three kinds of consumers, and the price discrimination happens due to price sensitivity, Pinduoduo can achieve first-degree price discrimination in this way with an updated version. The most important reason is that, in online shopping, people pay their bills by online payment, and all numbers are possible on the bills. In that case, Pinduoduo can practically set many different coupon amounts on the bills, with the smallest units of 0.01 dollars. Thus, the coupon amount and the prices can be technically subdivided nearly indefinitely by Pinduoduo.

Now considering that Pinduoduo can subdivide coupons indefinitely, by making rules and tasks more complex and functional, Pinduoduo can pay a certain amount of discount regarding the time users spend on tasks. For example, Pinduoduo can make distinguished tasks on the difficulty level from easy to hard. In this way, different consumers will only complete tasks at the level they are willing to, and they segment themselves from Pinduoduo's perspective. Then Pinduoduo can allocate different amounts of coupons to different consumers regarding the overall tasks they complete. Thus, in this way, Pinduoduo can allocate different discounts to every different consumer with different consumption budgets in the form of different tasks completed. The prices accepted by each individual, in this way, are the highest prices they are willing to pay. In other words, Pinduoduo can successfully exploit each consumer's consumption surplus if it keeps the coupons well divided and sets enough distinguished tasks. This is the reason why Pinduoduo can make a price strategy that is close to first-degree price discrimination.

In a lawsuit dealt by the Shanghai Changning Court, Pinduoduo has been sued by some consumers for its tricky way of setting tasks in discount deals [10]. These consumers suggest that some tasks are set in a tricky way and are too hard to complete in order to receive the discount. Initially, Pinduoduo will give a large but not the full amount of coupon to attract customers. Customers need to gather the whole coupon in order to use it. When they start to complete a task, such as sharing with others, the remaining discount will become increasingly difficult to obtain. Usually, consumers have already spent several hours to obtain the final cent of the coupon and still need to complete many tasks. Additionally, there are no exact number of tasks that need to be completed.

The representatives of Pinduoduo showed evidence on their computers to suggest that each time a customer completes a task, the discount they receive will be close to the whole discount number. However, according to the judge's outcome shown in the official min application, the completion process shown on the Pinduoduo application was 99.1%, while the computer number from the company was showing the same number but with 8 decimal places, indicating that the number only increases a little each time [11]. In the end, Pinduoduo won the lawsuit.

Although Pinduoduo does not directly subdivide the price, it uses the same thought to subdivide the numerical amount of the coupon process that customers have completed. By subdividing in this way, Pinduoduo can set many tasks belonging to different difficulty levels and each will have different target customers. Ultimately, different segments of customers can only complete the relative level that they are willing to achieve and receive different prices due to different discount amounts. Additionally, Pinduoduo can obtain product and activity promotions without too much cost in this

way. This is how Pinduoduo accurately segments customers and makes differentiated prices very close to first-degree price discrimination.

3. Suggestion

3.1. Suggestion for Consumers to Avoid

Consumers will always encounter price discrimination when shopping, some of which are exhibited in a hidden way, like Pinduoduo. In that case, the first step might be to recognize it when shopping. Particularly, when purchasing services and goods, consumers can compare the price level between different platforms to minimize the price difference. Besides, consumers should also be careful about the rights that have been authorized to the mobile application because many companies use big data collected from users' phones to help them draw price strategies. Reducing the rights given to the application can reduce the information received by companies and thus make price discrimination harder. Reducing the frequency of online shopping can also be helpful since price discrimination is harder to achieve offline, since much information used for price discrimination is collected electronically.

3.2. Suggestion for Government to Regulate

The relative privacy law needs to be built and improved to avoid the misuse of personal information in discriminating against consumers on the price level. This is because much price discrimination happens only if the company can have an accurate user image and can then decide on a suitable strategy. The government can also ask the company to show its price-setting code to the regulators to examine whether price discrimination exists. Furthermore, for those large companies, the government can directly impose significant fines since their behavior always has a leading impact on the whole market.

3.3. Suggestion for the Company to Improve

When obtaining profit, the company still needs to be concerned about the long-term effect of the brand and actions. In that case, first-price discrimination happens at the cost of consumers' satisfaction once consumers find the tricky place, since it seriously damages the consumers' shopping experience. Besides, the privacy law needs to be obeyed when collecting necessary users' information. Furthermore, although a price strategy can be used to attract new consumers, it cannot damage the interests of original consumers at the same time, otherwise, the old customers will be disappointed and leave.

4. Conclusion

This article is based on many relevant principles, explanations, and definitions of price discrimination that have been well discussed. Based on the definition and classification of types of price discrimination, different theories can be properly used for different examples when analyzing. The article is focused on incorporating theoretical character into different small steps of a company's activities and examining what kinds of price discrimination exist and how companies potentially use it imperceptibly. Although only two companies are discussed, all types of price discrimination are analyzed above. Other companies can also use price discrimination actions when treating consumers, indicating that consumers may always face price discrimination. Due to the lack of protection for personal privacy in China, no strict limit or law has been imposed against price discrimination, which induces companies to further increase the use of this unfair strategy in the market. The main reason might be that, if other companies use this strategy to chase profit and some of the other companies do

not use it, then those companies that do not use it will be expelled from the market for the lower profit in the long run, and consumers' experience and interest will be seriously damaged. Thus, the government must impose relevant restrictive laws to price discrimination. Consumers alone may also need to be careful about it in several ways and minimize that negative effect when shopping before the government makes relevant laws. Companies may also need to build core competitive strategies from other fields.

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