Exploration on the protection of consumer rights and interests in big data price discrimination

Zhao Qizhi

School of Law and Intellectual Property, China Jiliang University, Hangzhou, 310018, China

Abstract: *In the era of artificial intelligence, network platform operators utilize algorithmic technology to process user information and analyze user preferences for precise service recommendations. However, the professional and covert nature of this technology can potentially lead to the phenomenon known as "big data price discrimination". This phenomenon infringes upon consumers' rights to knowledge, independent choice, and fair trade. The fundamental reason behind this issue lies in the opacity and irrationality of algorithmic pricing behavior. To address this problem effectively, it is imperative to establish regulatory measures, develop mechanisms for interpreting algorithms, enhance relief mechanisms for consumer rights protection, and regulate big data and algorithmic technology at an institutional level. This entails clarifying the boundaries of data collection while also revealing the limitations inherent in algorithms. By implementing comprehensive regulations throughout all stages of operation through pluralistic governance approaches and legal improvements, we can dismantle the black box surrounding algorithms, regulate their power appropriately, and safeguard consumers' rights.*

Keywords: *big data price discrimination; discriminatory pricing; independent choice; fair trading rights*

1. The rationale for big data price discrimination

1.1. Behavioral elements of big data price discrimination

Big data price discrimination is fundamentally different from reasonable differentiated pricing strategy and precision marketing. Reasonable and differentiated pricing strategy and precision marketing are designed to better meet the needs of consumers, and to provide more personalized services and products according to the different characteristics and needs of consumers. Big data price discrimination is an unfair business behavior. It uses big data technology to implement different price strategies for different consumers, so that the price differences of goods or services of the same quality exist between different consumers.[1] This price discrimination not only damages consumers 'right to know and fair trade, but also leads to the gradual weakening of consumers' trust and dependence on e-commerce platforms.[2] Once consumers choose to use an e-commerce platform, they may constantly suffer from the reduced sensitivity to the price. The behavioral elements of big data price discrimination mainly include three aspects: establishing algorithm program, collecting user data and discriminatory pricing.

1.2. Algorithm routine

As a key starting point for the behavior of big data price discrimination, algorithm technology provides a powerful tool for e-commerce operators to implement discriminatory pricing strategies, so as to obtain excess profits. In the whole process of big data price discrimination, the design of a set of algorithm programs that meets the profit requirements of e-commerce platform occupies the core position. Large e-commerce operators usually have a professional algorithm design team, who carry out algorithm programming according to the specific needs of the operators. These algorithm programs are not only commercial secrets or intellectual property rights, but also the core means for e-commerce operators to achieve profits. The actual operation mode of this "algorithm black box" is determined by the subjective will and value position of the algorithm writers and controllers, which makes it difficult for the outside world to understand the specific operation mode of the algorithm and limits people's supervision and evaluation of the algorithm decision. Once the algorithm program is designed, the e-commerce operators will continue to optimize according to the pricing results and economic benefits

to achieve the goal of profit maximization. The current big data analysis technology has been able to customize data models for each user to achieve precision marketing and pricing.

1.3. Collecting data

E-commerce platforms are run with a lot of data collected, including consumers' buying, browsing and search records. These data are of great commercial value, but they should be collected under relevant legal principles to protect the rights and interests of consumers. Information collection involves e-commerce platforms and consumers.

The first method relies on the active participation of users, that is, users will actively fill in or confirm some personal information when registering an e-commerce platform account. The e-commerce platform legally collects information through this behavior of users, providing necessary material for the subsequent data analysis work. In this way, ensuring the accuracy, authenticity and integrity of the data mainly depends on the consciousness and integrity of the user, because the user is the original source and main provider of the information.

The second method is for e-commerce platforms to use algorithm technology to independently collect user data. Users' behavioral data on the platform will continue to accumulate and integrate to form a huge data set. These data are centralized and organized, forming a comprehensive and orderly information storage system, enabling e-commerce operators to have a deep understanding of key information such as consumer habits and needs. This information provides support for market positioning, product recommendation and big data price discrimination. By analyzing consumer data, e-commerce operators can more accurately judge their purchasing intention and purchasing power, and develop more accurate big data price discrimination strategies.

1.4. Differentiated pricing

E-commerce platforms use data analysis means to predict the market competition situation and consumers' purchase intention, and then flexibly adjust the price of goods or services within a certain scope according to the actual situation. Following the data analysis phase, consumers were assigned a variety of labels that reflect their financial ability and interest preferences. Based on these user tags and other consumer characteristics, operators divide consumers into different grades and establish a isolation mechanism between them. This means that consumers' pricing information about the same product is opaque to each other, as a result, consumers often do not know they are being overpriced. This mechanism ensures that the operator's algorithmic program can operate secretly and steadily, without being detected.

E-commerce platforms use a complex algorithmic pricing mechanism to ensure that different consumers pay different prices when they buy the same goods or services, thus maximizing their own interests and extracting the surplus value of consumers. [3]At the same time, these operators also use personal information to analyze the price sensitivity of consumers, providing coupons or price reduction measures for price-sensitive people to facilitate transactions; while the price-sensitive people may not take any concessions, or even set higher prices. This strategy makes it easier for consumers who are insensitive to prices or become loyal customers of the platform to fall into the trap of big data price discrimination and are repeatedly charged higher prices.

2. Analysis of illegality of big data price discrimination

2.1. Differentiated pricing is not illegal

On the one hand, according to China's current "Price Law" and "anti-monopoly Law", the differentiated pricing of operators should not be regarded as price discrimination. The reason is that the Price Law only restrains the price discrimination between the operators, and the operators' differentiated pricing through the algorithm obviously does not conform to this subject restriction. Similarly, the Anti-Monopoly Law forbids price discrimination, but only targets operators with a dominant market position and causes serious damage to the market competition environment. Therefore, differentiated pricing cannot be classified into the category of price discrimination in the Anti-monopoly Law. On the other hand, from the purpose of legislation, the Price Law and the Anti-monopoly Law aim to protect small and medium-sized business operators from price discrimination. Although the law does not prohibit the implementation of differentiated pricing for

different consumers, according to the principle of freedom, it is not illegal for operators to implement differentiated pricing for different consumers.

2.2. Differentiated pricing belongs to the independent management right of the operators

Differentiated pricing in offline transactions is a common marketing strategy that aims to attract more consumers and offer them more discounts or greater discounts to achieve maximum profits. This pricing method is essentially a neutral market approach and is not prohibited by law.

Online differentiated pricing is the scope of objects for operators to set market regulated prices, and e-commerce platform operators have the right to implement independent pricing for the goods or services they operate. This pricing method is essentially the embodiment of the operator's independent pricing power, so it should not be deprived. In essence, e-commerce is also a transaction between consumers and operators. In this scenario, the independent pricing power of operators should be respected. Implementing differentiated pricing can make business activities more flexible and more in line with the requirements of the efficiency principle of business activities. Through flexible pricing, operators can better meet the needs of consumers, making it easier to facilitate the deal.

2.3. Using algorithms for price discrimination violates consumer rights

By the above, e-commerce platform operators for different consumers set differentiation pricing does not violate the relevant laws in our country, but the operator in the use of big data algorithm for differentiation pricing, the abuse of consumer information, conceal key information behavior did not fulfill the legal obligation to inform, violated the consumers' independent choice and fair trade.

2.3.1. Infringement of freedom of choice

Article 9 of the Consumer Rights and Interests Protection Law of China gives consumers the choice of goods or services. Big data price discrimination operators in the case of consumers do not know differentiated pricing, consumers know that they will buy goods or services is not the only pricing, then may make different choices, and consumers do not know the existence of differentiated pricing, is the price information of goods or services is not comprehensive, which is caused by e-commerce platform operators. So you can't really have free choice.

As an operator, when providing a certain service, consumers should be clearly informed of the relevant restrictions. Consumption without consumers being informed not only deprives them of choice, but also makes it difficult to meet their real needs.[4] The right to know is the premise of realizing the choice. For the phenomenon of big data price discrimination, differentiated pricing information has a significant impact on consumer decision-making. E-commerce platform operators infringe on consumers' right to know, resulting in their inability to fully understand the information of goods or services, and thus fail to realize their choice.

On the other hand, there is a view that the operator does not fulfill the obligation of notification, its practice does not infringe the choice of consumers. Consumers are fully capable of comparing the prices by themselves. If they are dissatisfied with the price, they can choose other platforms to shop. However, if this behavior is elevated to the industry standard, and the operators of the whole industry are required to follow this practice, consumers will lose the freedom of choice, and then essentially lose the choice. In addition, when consumers buy goods or services on e-commerce platforms, they are easy to form certain consumption habits and trust some platforms that secretly carry out big data price discrimination, so that they will not compare the quotations received by themselves and other consumers. In the absence of price benchmarks with market credit, consumers will be difficult to achieve real choice and comparison.

2.3.2. Infringement of fair trading rights

Electric business platform often without user consent, use its critical data price discrimination, the critical data here, refers to the information not directly associated with the transaction process, such as the user's mobile application usage, address book content, and online browsing and shopping behavior data. In theory, as the owner of the data, consumers should have the right to decide which data can be used by the platform. However, in practice, e-commerce platforms tend to transcend this boundary and collect and use these non-critical data without authorization, resulting in the unauthorized over-development of users' personal information.[5]

Although the e-commerce platform clearly stipulates specific provisions on the use of data in laws,

industry regulations and user agreements, it explains in detail which user data can be analyzed and used under what circumstances, and clearly informs users of the scope of data use through user agreements, privacy policies and other ways.[6] However, in practice, due to the lack of information transparency between e-commerce platforms and consumers, coupled with the lack of consumers 'awareness of personal privacy protection, e-commerce platforms often use their data without users' authorization. This situation makes the user agreement originally designed to protect the user data lose its due role in practical applications.

In addition, "consumer rights and interests of protection law" article 10 clearly stipulates that consumers should enjoy the right of fair trade when buying goods or accepting services, which includes the conditions of fair trade such as quality assurance, reasonable price, accurate measurement, and have the right to refuse any form of compulsory trade. Obviously, ensuring that the price paid to the consumer is matched with the value of the goods or services received. However, in the phenomenon of big data price discrimination, operators not only do not transparently show the deep use of their data to consumers, but also use the concealment of algorithms to deliberately conceal the key information of differential pricing. This leads to a serious imbalance between the fees paid by consumers and the benefits actually obtained. These behaviors undoubtedly constitute a serious infringement of the rights and interests of consumers, especially the significant damage to the consumers' right to fair trade.[7]

3. The protection path of consumer rights in the big data price discrimination process

3.1. Improve consumers' right to information

Clarifying the specific content of consumers' information rights from the legal level not only helps to enhance consumers' awareness of information protection, but also helps enterprises to clarify their responsibilities and obligations when collecting and using consumer information. Although the principle of "notification and consent" stipulated in Article 17 of the Personal Information Protection Law in China strengthens the notification obligation of personal information processors, it only guarantees consumers' right to know, and does not clearly give them the right to refuse. Here, we can learn from the European Union's General Data Protection Regulation to add provisions in the law of data portability and data forgetting right for consumers.

The right to data portability, or the right to data migration, means that the user has the right to move his personal data from one data control agency to another, and the original data control agency must cooperate and provide the required data format. This equity ensures that users can choose different data service platforms according to their own wishes, thus promoting the free flow of data and fair competition in the Internet market. The right to data forgetting, also known as the right to be forgotten or deleted, refers to the right to ask the data controller to delete the relevant data when users no longer want their personal data to be processed or stored. This right emphasizes user self-determination and control of personal information. In addition, data controllers not only delete their own data and duplicates, but also are responsible for informing third parties to stop using and delete relevant data.

Therefore, when using e-commerce platforms, consumers should have the right to know what data the platform will use. For those data that is not necessary for the exchange, consumers should have the right to refuse the use of the platform, and such refusal should not affect their normal trading activities on the platform. If the platform uses these non-essential data without authorization, thus makes the consumers' personal data faces security risks, then consumers should have the right to ask the relevant administrative agencies to take measures to protect the security of their personal data. It not only regulates the in-depth use of data, but also reduces the information asymmetry between e-commerce platforms and consumers.

3.2. Improve the transparency to regulate algorithmic pricing

In order to ensure the fairness and transparency of the algorithm, and fully protect the legitimate rights and interests of consumers, the national regulatory agencies need to further strengthen their audit and supervision functions, and implement effective regulatory measures by improving the transparency of the algorithm. When consumers feel that the decision results of the algorithm infringe on their transaction fairness and related rights and interests, they should ensure that they have the full right to know. Therefore, certain information of the algorithm should be disclosed to consumers.

Specifically, the source code of the algorithm needs to be approved and filed by the government

regulatory authorities; for the algorithm part that may violate consumer rights and interests, the operation principle shall be disclosed, and the transparency and query of the data shall be ensured. E-commerce platforms should set up special positions and assign professionals to communicate with consumers and explain the operation mechanism of the algorithm to them. At the same time, in order to achieve the transparency of the algorithm, the designer of the algorithm should record the source of the data, and back up the collected data, to prevent data loss or leakage, and ensure that every step of the process is documented.

In order to achieve this goal, a series of measures should be taken: First, the regulatory responsibilities of public power departments should be clarified through administrative regulations to provide legal support for implementing algorithm rules and promoting the compliance of merchant platforms; Second, improve the self-management system of the big data algorithm industry, clarify the data protection and testing responsibilities of developers, and promote the development of algorithm standards within the industry; Finally, a comprehensive regulatory system should be built, including the establishment of a review and filing system for big data algorithms, and limited disclosure of specific types of algorithms (such as those involving consumer interests and providing livelihood services) under the premise of guaranteeing intellectual property rights and trade secrets, so as to reduce the problems caused by "algorithm black box" and ensure that all big data algorithms are subject to public supervision.

3.3. Implement the burden of proof inversion

In the era of big data, consumers face unprecedented challenges, especially in the face of price discrimination behavior. According to the first paragraph of Article 55 of the Civil Procedure Law and Article 70 of the Personal Information Protection Law, when there are large-scale violations of consumers' rights and interests, specific organs and organizations can file public interest lawsuits on behalf of consumers. However, the traditional "who claims, who proves" rule puts consumers at a disadvantage in the big data price discrimination dispute, because they struggle to touch the key evidence behind the platform, such as data collection and algorithm operation.

In order to solve this problem, we should learn from the principle of inverted burden of proof in the infringement cases of environmental pollution and ecological destruction. In big data price discrimination cases, it should also be considered to shift part of the burden of proof to the merchants or platforms that master the data. This is because merchants and platforms have huge amounts of user data and algorithmic technology, and they occupy an absolutely dominant position in the transactions with consumers. The inversion of the burden of proof can not only help to balance the evidence collection ability of both sides, but also weaken the dominant position of merchants due to information asymmetry, so as to better protect the rights and interests of consumers.

At the same time, the inversion of the burden of proof is also an important means to achieve substantive justice. In the big data price discrimination dispute, it is obviously unfair to ask consumers to bear the full burden of proof. By reducing the burden of proof on consumers, we can make it easier for them to protect their rights, while also encouraging merchants and platforms to process user data and use algorithmic technology in a more standardized way. This will help to create a fairer and more transparent market environment and promote the healthy development of big data technology.

4. Conclusion

With the rapid development of the Internet and big data technology, people's lives have become more convenient, but at the same time, individual behavior may also face the risk of being monitored in real time. The price discrimination behavior of big data is a typical manifestation of the improper use of technology. In the process of big data price discrimination, Internet platform operators rely on their own advantages and technical means to excessively collect and abuse consumers' personal information, make accurate portraits, and then implement differentiated pricing for consumers. This behavior not only infringes on the rights and interests of consumers, but also seriously damages the market order, especially the transaction order of the Internet market.

On the surface, big data price discrimination seems to be just a kind of different treatment behavior in price, but the in-depth analysis, in fact, highlights the obvious deficiency in personal data protection in our country. For the technical discrimination problem of big data price discrimination, lawmakers must strengthen the protection of personal data. When collecting, analyzing and using data,

e-commerce platforms must obtain clear authorization from consumers in advance and ensure that their actions comply with the principles of reasonable and necessary requirements. In order to strengthen the protection of personal data, we need to standardize the click contract and take measures to correct the information imbalance.

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