Theory and Practice of Science and Technology
2024, VOL. 5, NO. 4, 110-114
DOI: 10.47297/taposatWSP2633-456915.20240504

Big Data "Price Discrimination": Characteristics·Detriments·Governance

Yun Deng[1], Man Xu[2]

[1]School of Marxism of Sichuan Normal University Chengdu Sichuan 610066

[2]Changsha country vocational secondary school Changsha Hunan 410199

ABSTRACT

In the data-driven market landscape, various online service platforms employ sophisticated and intelligent algorithmic tools to assess and predict consumers' willingness to pay and purchasing power. While these tools contribute positively to orderly competition and rational production, they also facilitate the emergence of new forms of detrimental marketing practices, such as big data "price discrimination." Unlike traditional price discrimination, big data "price discrimination" is underpinned by robust technical support and exhibits characteristics including extensive reach, significant destructiveness, and pronounced concealment. The rise of this adverse marketing behavior not only infringes upon consumers' legitimate rights but also impacts the structuring and advancement of emerging industries while disrupting fair market order. To effectively mitigate the negative repercussions of big data "price discrimination" on both economic stability and societal welfare, governance has made strides toward legal regulation; however, challenges persist in terms of inadequate institutional frameworks, ineffective administrative oversight, and a lack of awareness regarding rights protection. Addressing these governance challenges, this paper proposes targeted solutions aimed at alleviating the potential crises posed by algorithmic misuse on consumer market vitality and the competitive dynamics within the digital economy.

KEYWORDS

Big Data "Price Discrimination"; Algorithms; Digital Economy; Platform Operators; Consumers

With the onset of the information age, digital technology has experienced rapid advancement and widespread application, resulting in a profound transformation across production processes, lifestyles, and governance structures. Notably, the accelerated integration and comprehensive empowerment of traditional industries by digital technology reflect a trend that is multi-directional, multi-layered, and interconnected. For instance, consumer service platforms leverage complex intelligent algorithms to construct detailed "portraits" of consumers—evaluating their willingness to pay and purchasing power—which facilitates automated, personalized, and precise supply; this has become the new norm for online services. However, phenomena such as online shopping, live streaming sales, ride-hailing applications, and travel platforms have exploited these advancements to engage in "price discrimination" against regular customers. Presently, the issue of "big data exploitation of loyal customers" has emerged as a prevalent concern within online consumption practices; if left unaddressed, it poses significant risks for commercial credit integrity and threatens the healthy stability of the digital economy.

1 An Analysis of the Characteristics and Implications of Big Data "Price Discrimination"

In the 1990s, the phrase "killing one's own " was incorporated into the fifth edition of the Modern Chinese Dictionary, denoting the exploitation of mutual trust among acquaintances for illicit financial gain. In traditional societies, individuals who lost their credibility faced significant social constraints, leading to a general expectation of sincerity and trust in interpersonal relationships. However, under the adverse influences of market economy dynamics, various immoral and unlawful behaviors surfaced; consequently, "killing one's own" became increasingly prevalent as pyramid schemes and clandestine gatherings emerged quietly within social circles.

"Big data" is defined by its substantial volume, rapid flow rate, diversity, and inherent value. When processed, this data transforms into informational assets that significantly enhance the decision-making capabilities, trend analysis, and optimization potential of its users. However, "technology platforms often exploit their technical superiority in data processing and deep learning algorithms to establish a covert dominance and control over the market... resulting in various ethical dilemmas."[1] Big data "price discrimination" is one example of dilemma. This phenomenon refers to the unethical marketing practices employed by platform operators who leverage their advanced information systems to collect, filter, and categorize consumer personal information. They analyze preferences regarding choices, price sensitivity, and purchasing intent before exploiting customer loyalty to impose higher prices on "regular customers"thereby maximizing profits. Currently, amidst an overwhelming array of discounts or bundled offers, big data-driven "price discrimination " has evolved into a stage characterized by "customization" where individuals may face unique pricing structures—making it increasingly challenging for consumers to protect themselves.

From the price exploitation of regular customers during the industrial era to the contemporary phenomenon of big data-driven pricing strategies, both practices are fundamentally motivated by self-interest yet exhibit distinct transformations. Methodologically, traditional price exploitation primarily capitalizes on established social networks, whereas big data pricing strategies leverage advanced analytical techniques to implement differential pricing and maximize profits. In terms of scope, traditional price exploitation is confined to victims within a specific social circle, while big data-driven practices can potentially affect any internet user, resulting in a significantly larger pool of potential victims. The destructiveness of big data pricing strategies is notably greater; if left unchecked, they pose risks not only to consumer markets but also threaten the integrity of the digital economy itself. In the internet era, smartphones and computers are effectively separated, and consumers will not deliberately compare prices, so they are easily deceived by the platform operator's warmhearted push notifications and generous discounts, and quietly become victims of "price gouging".

2 An Examination of the Adverse Effects Associated with Big Data "Price Discrimination"

In the context of instrumental rationality and utilitarianism, platform operators leverage big

data technologies to transform consumers into "visible" and "transparent" entities, conduct targeted tracking and focused breakthroughs, so as to achieve long-term stable profits. This approach not only "contradicts the moral orientation of 'people-oriented and serving customers' and the ethical concept of 'win-win cooperation and sharing benefits' "[2], but also shocks the life experience and technological trust that consumers are used to, ultimately leading to the loss of technological ethics and the decline of the digital economy.

Firstly, it infringes upon the legitimate rights and interests of consumers. "Internet platform enterprises exhibit characteristics of zero marginal cost, which facilitates the emergence of economies of scale through the Matthew effect, ultimately have stronger pricing power."[3] On one hand, platform operators leverage their advantages in algorithmic technology and data resources to create detailed consumer profiles, subsequently segmenting users into distinct pools based on preferences. This allows for the implementation of differential pricing strategies tailored to each user pool. In practice, however, platform operators typically do not disclose or alert consumers about potential price discrepancies. "The concealment of differential pricing may involve infringement of the consumer's right to know and even constitute price fraud."[4]On the other hand, during online transactions, platform operators can attract new users through technical means , while subtly increasing prices for existing customers who have established consumption habits and possess purchasing power—an evident infringement on consumers' right to fair trade.

Secondly, it influences the evolution of the structure of emerging industries. The implementation of big data "Price Discrimination" requires data collection, and this part of the data will appear in two scenarios during the application process: when both platform operators and consumers share aligned objectives, transactions proceed smoothly, resulting in mutual benefits; conversely, when their goals diverge, the platfor's customized push not only cannot meet the needs of consumers, but also easily produces "information cocoon". What's more, the platforms frequently maintain the privacy of consumers' personal information and share it through database "collisions" with other platforms. The utilization of consumer privacy for unjust enrichment initially undermines the trust of consumers in individual platform operators, and over time endangers consumers' confidence in the digital economy.

Finally, it disrupts the market order of fair competition. On the one hand, platform operators regard consumers' consumption willingness and consumption ability as the standard for pricing, which in a sense is a disregard for the law of value. Consequently, over time, the market's function of resource allocation becomes ineffective. On the other hand, prominent Internet platforms rely on their technological advantages and the accumulation of extensive consumer data during their early stages, establishing industry dominance. As a result, small and medium-sized competitors either struggle to gain traction or are forced to withdraw from the market, rendering the healthy competition mechanism ineffective.

3 Exploration of Governance on Big Data "price discrimination"

The business strategy of big data "price discrimination" is straightforward: Initially penetrate the market with competitive pricing to gain market share, and once dominance is established, subsequently capitalize on repeated transactions for maximum profit. The abuse of algorithmic power by the platform, the path dependence of consumers on the platform, and the information asymmetry between the two sides of the transaction are three key factors contributing to big data "price discrimination". To mitigate the potential crisis that algorithm abuse poses to the daily vitality of consumer markets and the competitive landscape of the digital economy, incorporating the governance of big data "price discrimination" into the rule of law is the preferred strategy. At this stage, the legalization of governance over big data "price discrimination" has made significant breakthroughs in rule-making, administrative supervision, and judicial practice. However, in effectively combating and curbing big data "price discrimination" and fully safeguarding and protecting consumer rights and interests, there are still many challenges that need to be addressed. Therefore, it is imperative to further employ legal thinking and principles to advance the governance process.

3.1 Expedite the formulation of legal frameworks and regulations to effectively tackle big data "price discrimination"

The prerequisite for big data "price discrimination" governance to be incorporated into the track of rule of law is to legislate, revise and repeal laws with the times. The Regulations for the Implementation of the Law on the Protection of Consumer Rights and Interests, which came into effect on July 1, 2024. Article 9 of this law is considered the direct legal basis for big data "price discrimination" addressing .The revised sentence: "Business operators are prohibited from setting different prices or charges for the same goods or services under identical trading conditions without the knowledge of consumers." However, the identification and punishment of behaviors have been addressed only in a general manner.The Price law and the Consumer Rights and Interests Protection Law mandate platforms to "clearly indicate pricing", without explicitly prohibiting differential pricing for consumers.Commercial platforms that hold a dominant market position and engage in price discrimination may face regulatory action under anti-monopoly laws, while small and medium-sized commercial platforms without significant competitive advantages can still evade scrutiny.The current laws on big data "price discrimination" lack sufficient deterrence and enforcement, both in terms of price fraud and price discrimination, thereby failing to effectively combat these issues.

3.2 Reinforce the reform of the regulatory framework for governing big data "price discrimination"

We will innovate market supervision methods, and adhere to the combination of administrative supervision and industry self-discipline.On one hand, it is imperative to establish a

regulatory body for big data governance. Specifically, under the leadership of the Market Supervision Administration, relevant departments should coordinate and collaborate in conducting regular specialized rectification actions while utilizing technical means to enhance monitoring and early warning mechanisms on online platforms. On the other hand, establish a self-discipline mechanism within the industry. The autonomous organization, comprising Internet professionals, possesses a distinct advantage in comprehending industry dynamics, identifying industry issues, and proposing targeted and actionable solutions. It serves as a bridge between the government and enterprises by facilitating effective communication. Through self-regulation and self-restraint, it aims to foster an equitable market environment that promotes the healthy growth of the industry.

3.3 Moderately alleviate the burden of proof in the context of consumer rights protection

In civil infringement disputes, the principle of "who asserts, who proves" is usually applied. However, in cases of big data "price discrimination", consumers face difficulties in providing evidence and high costs for seeking justice. Moreover, there has been ongoing controversy regarding the determination of illegality in big data "price discrimination" within judicial practice. Platform operators, who hold technological and informational advantages, often defend themselves with various reasons while consumers struggle to provide counter-evidence. In order to uphold fairness and justice under the law, it is suggested that a rule of reversed burden of proof be adopted in handling cases of big data "price discrimination", shifting the burden of proof onto the opposing party and requiring platform operators to prove the legality of their actions.

3.4 Enhance consumer awareness regarding the protection of information security

As consumers enhance their awareness of information security protection, they can effectively

mitigate the risk of critical privacy information being collected. Firstly, it is essential to deliberate carefully before requesting access rights on any platform; this includes thoroughly reviewing the "service agreement" and "privacy policy", as well as exercising caution when selecting the "agree" option. Secondly, during online transactions, consumers should strive to obscure identifiable personal information features, routinely delete browsing and bookmark histories, and eliminate traces of personal usage. In addition, consumers should consciously use the convenience of the internet to compare prices across different stores, thereby reducing the risk of being "overcharged" by familiar sellers.

In the era of big data, the digital economy has flourished vigorously, and "online consumption " has become the new normal in people's lives. However, we must also confront the hidden dangers and risks of big data "price discrimination". Such behavior "undermines the 'trust interests' of general consumers by exploiting their 'personal information' to implement intelligent and differentiated pricing.While it may be challenging to assess its harm to consumers through a market logic lens, such practices erode the welfare that consumers are entitled to, lacking any legitimate justification."[5]China remains the initial stage of exploring the legalization of big data "price discrimination". The institutional design and implementation are not yet perfect. Therefore, we need to further optimize the details of the legalization of big data "price discrimination" governance, enhance its operability in practice, so as to better protect consumer rights and promote the stable operation and healthy development of the digital economy.

Funding

Comprehensive Research Initiative on Ideological and Political Theory Educators in Higher Education Funded by the Ministry of Education"An Investigation into the Historical Experiences and Developmental Principles of Ideological and Political Education in the Context of a Century of Party Building"(21JDSZKZ02); The 2020 Institutional Course-based Teaching Reform Initiative on Ideological and Political Education at Sichuan Normal University"An Examination of the Perspectives and Emphases in Constitutional Education within the Political and Ideological Education Discipline" (JWCJF202080210)

About the Author

Yun Deng (1980-), Female, Chengdu, Sichuan, Master, Lecturer, School of Marxism, Sichuan Normal University. Research Fields: Teaching Research of Ideological and Political Theory Courses in Colleges and Universities, Research on the Theory and Practice of Socialist Rule of Law with Chinese Characteristics;

Man Xu (2000-), Female, Dazhou, Sichuan, Master, Changsha country vocational secondary school. Research Fields: A Study on the Integrated Approach to Ideological and Political Education Across All Educational Levels.

References

[1] Zheng Zhihang. Ethical Crisis and Legal Regulation of Artificial Intelligence Algorithms [J] . Jurisprudence Science (Journal of Northwest University of Political Science and Law),2021,39(01):14-26.

[2] Zou Kailiang, Peng Rongjie. Legal Classification and Regulation of big data "price discrimination": A Two-Dimensional Perspective on Algorithmic Regulation and Consumer Rights Protection [J]. Financial Economics, 2020 (07):51-57.

[3] Hu Lipiao. Why big data "price discrimination" Continues to Persist Despite Being Prohibited [N]. China Quality News. 2024-01-31: Page 02.

[4] Miu Qingke. Regulatory Pathways for big data "price discrimination" [N]. People's Court Daily 2023-09-01: Page 07.

[5] Liu Ying, Zhang Zhuoyuan. Creating a Safe, Trustworthy, and Fair Restraint Consumption Environment - Thinking about the big data "price discrimination" Phenomenon from the Perspective of the Implementation Regulations of the Consumer Rights Protection Law [J]. China Credit, 2024(06): 83-89.