Journal of Sociology and Ethnology (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/jsoce.2025.070324
ISSN 2616-2318 Vol. 7 Num. 3

Governing Big Data Swindling: Experiences from China

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Keywords: Algorithm Discrimination; Algorithmic Governance; Big Data Swindling; Multi-Stakeholder

Abstract: Big Data Swindling—algorithmic price discrimination exploiting user data without consent—represents a growing threat to consumer rights. This study examines China's governance responses to the phenomenon through a multi-stakeholder lens. Findings reveal a governance framework anchored in policy regulation, corporate self-discipline, social oversight, and consumer empowerment, coalescing into a "government-led, multi-participatory" model. By leveraging state leadership while engaging platforms, civil society, and users, China has advanced collaborative efforts to curb exploitative data practices. Despite the borderless nature of digital governance, China's experience offers valuable insights for global strategies in regulating algorithmic consumer harm.

1. Introduction

We now live in an algorithmic age shaped by a technical elite, where algorithms increasingly mediate human decisions and are deeply embedded in social and organizational structures, reshaping everyday life and institutional logic[1]. In commercial domains, platforms leverage big data and artificial intelligence to construct detailed user profiles and anticipate behavior, enabling personalized pricing and operational efficiency. However, this capability also facilitates the practice of algorithmic price discrimination—commonly termed Big Data Swindling—where loyal or high-spending users are charged more based on behavioral data and predictive algorithms[2]. This form of covert price customization, enabled by data surveillance and algorithmic control, has been linked to the broader phenomenon of surveillance capitalism[3], raising serious concerns about fairness, transparency, and consumer autonomy.

In China, Big Data Swindling is prevalent in e-commerce, online travel, and food delivery platforms High-profile cases, such as consumer complaints against Ctrip in 2019 over suspected price manipulation in airfare and hotel bookings, have highlighted the practice's ethical and legal challenges. Beyond violating consumer rights, it exposes systemic risks in data governance, privacy protection, and corporate accountability, undermining public trust in digital platforms. Compared to traditional price discrimination, Big Data Swindling is more precise, concealed, and difficult to detect or regulate. Addressing it requires moving beyond conventional regulatory approaches toward a collaborative, multi-stakeholder governance model.

2. Literature Review

2.1. Algorithmic Discrimination

While algorithms and big data offer significant potential for societal benefit, their widespread adoption in public and commercial decision-making has raised concerns about systemic bias, opacity, and accountability deficits. Despite their perceived neutrality, algorithmic systems can reproduce and amplify social inequalities, often disadvantaging specific individuals or groups and undermining public trust.

Algorithmic discrimination is fundamentally a socio-technical issue, shaped by both technological design and human agency. It arises not from inherent machine bias, but from the interplay of flawed data, design choices, and institutional contexts. A key driver is the concentration of power in the hands of algorithm controllers, who leverage vast user data and iterative technical development to exert influence over users—enabling discriminatory practices in areas such as sales, employment, and advertising[4].

Crucially, algorithms are not neutral. Discriminatory outcomes often stem from biased training data—such as underrepresented populations in healthcare or employment datasets—or from the values and assumptions embedded by developers. This can manifest in phenomena like filter bubbles in news recommendation systems, which reinforce ideological isolation, or "algorithmic pollution" resulting from unchecked data aggregation.

To address these challenges, governance strategies must go beyond technical fixes. Effective responses include enhancing algorithmic transparency[5], empowering individuals with rights to explanation, and strengthening regulatory oversight to constrain algorithmic power. Such measures are essential to ensure fairness, accountability, and public legitimacy in algorithmic decision-making.

2.2. Big Data Swindling

Big Data Swindling—also termed algorithmic price discrimination or personalized pricing—is a prominent manifestation of algorithmic bias in commercial contexts[6]. It involves the unauthorized collection and analysis of user data to construct detailed behavioral profiles, creating significant information asymmetry between platforms and consumers[7]. This enables platforms to implement differentiated pricing for identical goods or services, often targeting loyal or high-spending users who are less price-sensitive.

This practice operates along three interrelated dimensions: (1) Data foundation: extensive harvesting and mining of personal data; (2) Mechanism: algorithmic systems that translate data insights into dynamic, individualized pricing; and (3) Target group: existing customers, whose accumulated behavioral data make them more susceptible to price optimization.

Big Data Swindling reflects the misuse of algorithmic power and tensions over data ownership. It undermines the principle of transparent pricing, erodes consumer trust, and threatens the fairness of digital markets, prompting calls for stronger regulatory oversight[8]. However, scholarly perspectives are not uniform. Some argue that such pricing only constitutes harm when practiced by dominant firms, emphasizing that moral concerns must be distinguished from legal liability. They advocate for an evidence-based assessment of its economic effects, reflecting a broader shift in academic discourse—from initial ethical condemnation toward a more nuanced, empirically grounded understanding.

2.3. Multistakeholder of Internet governance

The concept of stakeholders—originating in corporate governance—refers to individuals or groups

that influence or are affected by an organization's objectives[9]. It emphasizes that organizational decisions should account for the interests of all affected parties[10]. Over time, this idea has been widely applied to global public governance, becoming a central framework for addressing complex, transnational challenges.

In the 1990s, the term multi-stakeholder emerged and gained institutional recognition through key forums such as the World Summit on the Information Society (WSIS), the Internet Governance Forum (IGF), and NETmundial. It has since become nearly synonymous with Internet governance, reflecting the Internet's decentralized, open, and borderless nature. The multi-stakeholder model is widely regarded as the most effective approach to managing this complex ecosystem, promoting cooperation among states, civil society, private corporations, and technical communities.

While there is no universally agreed definition, the core principle is equal participation across diverse actors in decision-making processes. This inclusivity aligns with the complexity of digital governance and supports values such as shared responsibility, dynamic engagement, and practical implementation. However, no single model fits all contexts, and frameworks continue to evolve in response to emerging challenges[11].

In the face of growing issues like Big Data Swindling, multi-stakeholder governance has become not only a practical necessity but also a global trend, offering a flexible and collaborative path to ensure accountability and trust in the digital economy.

3. Policy and Legal Regulation

The growing prevalence of Big Data Swindling in China has sparked widespread public concern. A 2022 survey by the Beijing Consumer Association revealed that 76.77% of respondents perceived the existence of such practices, and 78.24% attributed regulatory difficulties to inadequate legal frameworks. Over 81% advocated for stronger legislation, reflecting strong public support for legal intervention.

China's Internet governance framework has evolved in response to technological change, with enhanced regulation seen as essential for social stability and national governance capacity[12]. In the multi-stakeholder model, both central and local authorities have enacted laws and regulations to curb algorithmic price discrimination.

At the national level, Article 18 of the E-Commerce Law requires platforms to offer non-personalized search options, marking the first legislative recognition of algorithmic personalization and a direct step toward curbing Big Data Swindling. The Personal Information Protection Law further strengthens consumer rights by establishing an "inform-consent" framework, restricting excessive data collection, and explicitly prohibiting unreasonable price discrimination in automated decision-making. In 2020, the Interim Provisions on Online Tourism Services banned differential pricing in travel services. The 2022 draft revision of the Anti-Unfair Competition Law proposed fines of up to 5% of annual turnover for such violations.

Locally, Shenzhen's 2022 Data Regulations—China's first comprehensive data law—prohibit unjustified differential treatment based on data analysis and impose fines up to 50 million yuan or 5% of revenue. Similarly, Shanghai's 2021 Guidelines on Algorithm Application ban unfair pricing and unreasonable consumer discrimination. Zhejiang's 2022 Public Data Regulations further systematize public data governance.

These measures reflect a shift from content-centric to algorithmic governance[13], targeting data collection, mining, and recommendation mechanisms. They also signal a reassertion of state authority in digital governance. However, challenges remain. Regulatory fragmentation across departments can lead to overlapping or conflicting mandates, and coordination mechanisms require strengthening.

Despite robust legal development, controversies persist. Personalized pricing may yield efficiency

gains, and blanket bans could inadvertently harm consumers. Moreover, enforcement remains difficult in dynamic sectors like online travel (OTA), where services are consumed immediately, limiting recourse even when discrimination is detected. Legal clarity is also needed on cases where users consent to pricing despite asymmetry.

4. Industry self-discipline

While government leadership remains central, China's Internet governance also emphasizes social participation, with enterprises and civil society playing significant roles in a decentralized digital environment[14]. Beyond state-imposed regulations, industry self-discipline serves as a crucial mechanism for ensuring the healthy development of the Internet, functioning as an efficient form of social control[15].

In response to concerns over algorithmic opacity and data exploitation—hallmarks of Big Data Swindling—industry actors are increasingly expected to ensure algorithmic fairness and accountability. Algorithm governance has thus become a key dimension of corporate social responsibility, with responsible algorithmic practices emerging as a societal expectation[16].

First, industry associations have promoted self-regulation through formal conventions. In October 2020, five major online travel platforms jointly adopted the Self-Discipline Convention for the Internet Tourism Service Industry, committing to protect user privacy and restrict data use without consent. More broadly, on November 19, 2021, the China Federation of Network Social Organizations launched the Self-Discipline Convention on Internet Information Service Algorithms, calling for fairer recommendations, reduced misinformation, and enhanced user rights—including transparency, feedback mechanisms, and informed consent regarding algorithmic services.

Second, leading platforms have responded to regulatory and social pressure by disclosing algorithmic principles to enhance transparency and legitimacy. In 2022, major firms—including Alibaba, Tencent, ByteDance, and Baidu—filed and published details of their recommendation algorithms with the Cyberspace Administration of China, enabling public scrutiny of algorithmic design and operation. This reflects a shift toward organizational legitimacy through transparency, although such disclosures remain more limited in scope compared to Western counterparts, who often resist revealing technical details due to concerns over imitation and manipulation[17].

Third, consumer associations act as semi-official intermediaries between the state and market, advocating for consumer rights and mitigating conflicts. The China Consumers Association has highlighted how Big Data Swindling undermines the right to know, fair transaction, and autonomous choice, while noting the challenges of evidence collection and redress. In 2021, it convened a forum urging platforms to strengthen self-discipline and refrain from using consumer data profiles for discriminatory pricing or misleading strategies.

Despite these efforts, China's governance of digital platforms remains characterized by strong regulation and relatively weak self-regulation. While self-discipline mechanisms—such as codes of conduct, transparency initiatives, and consumer advocacy—are emerging, they often function under state guidance rather than as independent industry initiatives. Moreover, algorithmic opacity continues to pose challenges for consumer protection and fair competition.

5. Consumer self-protection

China's Internet governance has long suffered from an imbalanced regulatory structure, marked by inadequate coordination among platforms, public authorities, and users. Consumers, often at a structural disadvantage, are vulnerable to data exploitation by powerful digital platforms. In response, enhancing consumer agency—through algorithm literacy and collective action—has become essential to rebalancing power in digital ecosystems[18].

5.1. Enhancing Algorithm Literacy

As algorithm-driven personalization becomes ubiquitous[19], users are increasingly shaped by opaque systems they do not understand. Most consumers lack awareness of how algorithms filter content and influence behavior, limiting their ability to critically engage with digital platforms[20]. Improving algorithm literacy is therefore a critical step toward empowerment. This includes understanding the basic mechanisms of algorithmic recommendation, recognizing risks associated with data collection and AI, and developing strategies to protect digital privacy—such as limiting data permissions, avoiding overexposure, and reducing dependency on single platforms.

5.2. Collective Action through Exposure and Reporting

Consumers are also mobilizing through crowdsourcing mechanisms to challenge algorithmic injustice. In China, users frequently expose suspected cases of Big Data Swindling on social media, comparing prices and experiences to identify potential discrimination. These public disclosures generate collective evidence and exert reputational pressure on platforms, serving as a form of grassroots accountability.

Formal reporting channels—operated by government agencies, consumer associations, and platforms—further enable users to file complaints. Verified cases may lead to public exposure or regulatory intervention. However, proving algorithmic price discrimination remains a major challenge Legal definitions of Big Data Swindling are still ambiguous, and establishing a causal link between platform algorithms and discriminatory outcomes requires technical expertise beyond most consumers' reach.

As a result, while awareness is rising, few consumers pursue litigation. Most disputes are resolved informally, often through platform negotiations aimed at preserving corporate reputation. This highlights a gap between growing public scrutiny and effective legal redress—underscoring the need for clearer standards and stronger institutional support for consumer self-protection.

6. Conclusion

The regulation of Big Data Swindling reflects the broader challenge of governing science and technology in the information age. At its core, it stems from disputes over information control and exacerbates power asymmetries in digital transactions[21]. China's Internet governance has evolved from a top-down, single-channel model toward a multi-dimensional, collaborative framework that integrates online and offline domains.

Effectively addressing Big Data Swindling requires moving beyond traditional decentralized models. A co-governance approach—government-led yet multi-stakeholder-driven—offers a promising path forward. This entails strengthening institutional coordination, clarifying roles among state, platform, civil society, and users, and enhancing both regulatory design and enforcement mechanisms. While progress has been made, the complexity of algorithmic exploitation demands sustained collaboration across regulators, enterprises, and consumers to achieve equitable and transparent digital markets.

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