

# *Unfair Competition Regulation of Data Crawling Behavior under the Background of Digital Economy—From the Perspective of Judicial Judgment*

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**Abstract:** The current judicial practice to adopt static data crawl dispute right path regulation, starting from the data controller data rights, whether in breach of data the crawler agreement as the legitimacy of the key factors for determining crawl behavior, interests protection unilateralization problems, unable to cope with constantly emerging new data market behavior of trouble. In view of the changes in the adjudication thinking of unfair competition of data crawling at home and abroad, the judicial authorities should adopt the basic values of competition law, such as fairness and efficiency, as the guidance and turn to the results-oriented adjudication thinking of balancing data interests when applying article 2 of anti-unfair competition Law to regulate data crawling disputes.

## 1. Introduction

The advent of the digital economy era has prompted platform merchants to highly value the economic worth of data, as it has emerged as a crucial production element and core competitive edge determining the development prospects of internet platforms. Internet platforms primarily obtain data through two main paths: one being data sharing among parties through "open interfaces", and the other being the collection of website information through "web crawling" technology by one party. Instances of data crawling activities without consensus from both parties have triggered intense disputes between data crawlers and data controllers regarding the actions of data crawling and countermeasures. Considering that the value of data lies in its circulation, close connection to the personal rights and interests of users, lack of exclusive effects, and scene-specific protection, the ownership of data in the context of data crawling has yet to be clearly defined in legislation, thus leading to theoretical disputes. Disputes over data are primarily resolved in practice through copyright law, personal information protection, protection of trade secrets, and the route of countering unfair competition, with the latter being a significant focal point for disputes arising from data crawling.

## 2. Judicial Dilemmas Posed by Data Crawling in the Context of the Digital Economy

The legality of the automatic data scraping behavior of data collectors, as well as the dispute

focus on whether the data controllers' anti-scraping and exclusion protocols result in unfair competition consequences, bring about a debate intertwined with the issue of data protection at the legal system level of the Anti-Unfair Competition Law. The prevailing practice in judicial proceedings currently involves invoking the general provisions of Article 2 of the Anti-Unfair Competition Law to assess the new types of unfair competition relationships in the Internet industry. In the first data unfair competition case in China - Sina Weibo vs. Maimai unfair competition case, the appellate court established the "three evaluation elements" for the application of the general provisions of the Anti-Unfair Competition Law to new types of unfair competition relationships in the Internet industry, enriching the three conditions established by the Supreme Court in the "kelp quota case". This has consequently created a landscape of six elements for analyzing unfair competition in the Internet industry.

## 2.1 Biased positioning of the legal nature of crawler protocols

The crawler protocol, also known as the Robots protocol, is a document established by the Internet Content Provider (ICP) to regulate the behavior patterns of search engines. The legality of data crawling and countermeasures is evaluated by the court based on whether it violates commercial ethics and principles of honesty and credibility. Adherence to the crawler protocol is considered an industry practice, and non-compliance with the protocol by data crawlers is deemed a violation of commercial ethics, serving as a key basis for identifying unfair competition behavior. In the case of Baidu v. Qihoo, the court recognized the Robots protocol as an industry practice, and Qihoo's violation of Baidu's Robots protocol was deemed a malicious breach of the widely accepted commercial ethics in the Internet industry, leading to the classification of Qihoo's data crawling behavior as unfair competition conduct. This judicial approach assumes that the content of the crawler protocol is legitimate and in line with market competition order, which may not necessarily be the case in practice.

At present, the legal effectiveness of web crawling protocols remains unsettled, with their technical and competitive features precluding the contractual force under civil law. <sup>[1]</sup>In the vigorous competition of the internet sphere, internet content providers, acting as operators, often append additional competitive attributes to web crawling protocols in order to maximize their own interests, resulting in the gradual loss of legitimacy of web crawling protocols as contractual terms. The contents of web crawling protocols only reflect the unilateral will of data controllers, with limited coercive force over data crawlers and possessing a certain degree of uncertainty. Therefore, ensuring the precision of web crawling protocols is advantageous for analyzing whether data controllers engage in unfair competition through the use of such protocols. <sup>[2]</sup>

The "Convention on Self-Regulation of Internet Search Engine Services" categorizes the robot protocol as "international industry norms and commercial rules." However, as a new factor of production, the principle of free data flow has been widely accepted by countries around the world, with the value of data hidden in the process of flow. Facilitated by the advancement of internet businesses and the interplay of potential data connections and inherent rules, the free flow and deep exploration of data can maximize the creation of new social and economic value. The "Convention" aims to establish the Robots protocol as an industry order to leverage it as a technical tool for computer network communication to uphold a fair, open, and orderly market competition order on the internet. This does not inherently grant legitimacy to the content of the Robots protocol. As seen in the case of Baidu vs. Qihoo, the court distinguished between the Robots protocol and its utilization, thereby effectively determining unfair competition practices. However, this judicial pathway blurs the judicial standards and fragments the unified judicial path.

## 2.2 Protection of rights leads to the stimulation of interest protection unidirectionality

In the dispute over data acquisition, the form of data rights and their ownership are the focal points of legal contention. It is commonly agreed upon that data rights involve multiple entities, the diversity of sources of data economic benefits, and the complexity of intertwined interests determine that an open-minded approach is more appropriate for data property rights. Disputes regarding data acquisition primarily arise among competing entities in platforms, where data controllers incur certain operational costs to acquire corresponding data rights. Hence, courts tend to consider such data as a right belonging to the data controller, even as a proprietary right. Based on the determination of data rights ownership, the judicial path of determining infringement involves assessing whether the legitimate rights of operators have actually been harmed due to data acquisition, serving as a key basis for the identification of unfair competition by data acquisition parties. The logic of private law protection for rights is a manifestation of the infringement law nature of the Anti-Unfair Competition Law, emphasizing the protection of data rights on internet platforms in the digital economy. However, the static adjudicatory approach of rights conflicts with the dynamic development of data rights and the protection of scenarios, which may lead to a judicial protection bias towards data controllers and overlook the competitive interests of data acquisition parties.<sup>[3]</sup>

In light of the widespread recognition of data circulation principles in various countries' laws, as well as the maximization of value derived from data circulation through crawling activities, the legitimacy of data sharing behaviors and competitive interests of data crawlers is affirmed. Disputes over data crawling in the field of anti-unfair competition fundamentally stem from the competition between data controllers and data crawlers with regard to their respective data competitive interests. There is inherently no hierarchy difference in the interests of both parties, and a unilateral approach in the adjudication process is detrimental to maintaining a fair competitive order in the data market.

The stance of American courts on the determination of "authorization" for data scraping reflects the resurgence of the anti-unfair competition legal thinking in the judgments of data scraping lawsuits. In the case of *Craigslist v. 3Taps* in 2013, the court acknowledged Craigslist's claim that the defendant's continued scraping of data after receiving a cease and desist letter and taking countermeasures violated the CFAA by constituting "unauthorized" access. Subsequently, in the 2019 case of *hiQ v. LinkedIn*, where hiQ was prohibited from scraping data, the court rejected the notion that unilateral expressions and counter-technical measures should not have the legal effect of prohibiting market entities from accessing information. Instead, it sought to measure the interests of all parties and public interest based on the competitive mechanism of the open internet market.

## 2.3 Inter-sector competition among data results in the complexity of determining competitive relationships

The Internet platform significantly reduces the cost for market players to provide products and services, and the low threshold for market access brings about a shared demand for data flow among different industry players. The Internet market competition exhibits cross-industry and heterogeneous characteristics. Traditional judicial practices define the legitimacy of competitive behavior from the perspective of competitive relationships, namely, the existence of competitive relationships as a prerequisite for identifying unfair competition. Traditionally, the existence of a competitive relationship is based on operating the same or similar products, and there is no competitive relationship between operators in different industries. New types of competitive relationships continue to emerge in the Internet market. Simply using the existence of a competitive relationship as a constitutive element of unfair competition, or limiting competitive relationships to within the same industry, will restrict the scope of adjustment of unfair competition laws in the

Internet market, which does not meet the flexible requirements of judicial practice.

The provision of Article 2 of the Anti-Unfair Competition Law focuses on unfair competition practices as its regulatory object, without explicitly stipulating the existence of unfair competition relationships as a prerequisite for the application of the Anti-Unfair Competition Law and the identification of unfair competition practices. The general provisions concerning the adjustment scope and application criteria of the Anti-Unfair Competition Law have set unreasonably strict restrictions in the absence of a legal framework for data crawling behavior. On the contrary, maintaining an open-minded attitude is more conducive to meeting the legal demands of the rapidly developing internet economy. In the digital economy, the key element of competition between market entities is data traffic. Even between entities in different industries, there exists competition in terms of data flow.<sup>[4]</sup> In specific disputes related to data crawling, the data controlling party and the data crawling party offer different products and services, which may not necessarily belong to the same market or have traditional market competition relationships. However, from a technical standpoint, data crawling, by extracting web data in large volumes, can disrupt the normal operation of the platform and have adverse effects on the original website by diverting traffic. Furthermore, when the data controlling party employs technical measures to restrict the access of other platforms to data, there is a possibility of using their market position to unfairly impede the fair competition of others and disrupt the orderly competitive market environment.

### **3. Regulating data scraping behavior within the realm of unfair competition**

The Anti-Unfair Competition Law should regulate the scraping activities and countermeasures between data controllers and data scrapers to prevent unfair competition advantages and uphold the principle of free competition. The current draft of the Anti-Unfair Competition Law has not specifically addressed the regulation of data scraping activities. The existing Article 12 of the Unfair Competition Law lacks specificity and substantive criteria for evaluating internet-related issues. Judicial practice primarily relies on Article 2 of the Anti-Unfair Competition Law, applying general provisions on the elements and criteria for unfair competition to determine the legitimacy of data scraping activities. Due to the general nature of these provisions and the lack of clear descriptions of behavioral attributes, there is no uniform legal framework for analyzing the legitimacy of data scraping activities in competition law. The main legal disputes center around the nature of data scraping agreements, the classification of legal acts involving the use of web scraping technology and agreements, and how to balance the interests of multiple parties.

#### **3.1 Clarification of the nature of robot protocols**

In numerous cases involving disputes over unauthorized competition in the extraction of enterprise data, courts tend to adhere to the Robots protocol as an industry practice. The determination of the legitimacy of data extraction behavior hinges on whether it violates the Robots protocol. However, the Robots protocol itself does not inherently possess legitimacy. Equating a violation of the Robots protocol with unfair competition behavior essentially oversimplifies the principles of honesty and commercial ethics. This, to some extent, may lead to a broad application of the general rules of unfair competition law. Furthermore, the Robots protocol is unilaterally provided by the data controlling party and has not been endorsed by the data retrieval party. The data extraction party has not adhered to the legal and contractual obligations set forth in the agreement.

Examine the essence of the matter, the current judicial practice fails to rigorously differentiate between the use of Robots protocols and the behaviors involving them. The Anti-Unfair Competition Law targets competitive behaviors for regulation; therefore, legal disputes involving

the key issue of the law should focus on the actions of the parties in setting Robots protocols rather than their contents. In the case of Qihoo 360 suing Baidu for unfair competition, Baidu's discriminatory practices in setting Robots protocol whitelist to restrict the crawling of its web page content by 360's search engine have become the focal point of the unfair competition determination. Similarly, in the case of Toutiao suing Weibo, Weibo's exclusive use of Robots protocol blacklist to restrict ByteDance Company from crawling related web page contents has become the focal point of the unfair competition determination. Thus, data crawling, as a typical technical competitive behavior in the development of digital economy, should be assessed based on the legitimacy of the actions and the determination of fair competition in such disputes.

### **3.2 From the "Pulse" case against Maimai to the lawsuit by Jinri Toutiao against Weibo, we can observe a shift in the judicial reasoning**

In the cases of the Dianping's lawsuit against Baidu and the dispute between Alibaba and Nanjing Ma Zhu concerning data scraping, while the court's judgment direction has not strayed from the path of rights protection, legally elevating the data control party's data interests to the level of exclusive protection of intellectual property rights. However, the key factors of core competition and substantive substitutability have become crucial elements for the court to assess the legitimacy of data scraping behavior, reflecting the dynamism in the court's judgment path. The court has included the market competition interests of the data scraping party and the consumers' data rights within the scope of interest balancing. The shift in the court's thinking regarding unfair competition disputes related to data scraping can be glimpsed in the case of Toutiao v. Weibo. In the second-instance court ruling, the simplistic determination of commercial ethics by the first-instance court was overturned, and a comprehensive assessment was made, taking into account factors such as the website operator's autonomy in operation and the balance between maintaining the interests of other operators, consumers, and competition order. Emphasizing the legitimacy of competitive means and the integrity of the witnessing mechanism, greater consideration was given to market competition objectives, leading to the recognition that Weibo's inclusion of the Robots blacklist falls within the scope of autonomous business operations.

The Unfair Competition Law aims to provide a fair competitive market environment for all market entities. The regulation of data scraping behavior should revolve solely around legislative principles and objectives, identifying and penalizing new types of unfair competition practices that disrupt market competition order and infringe upon the legitimate rights and interests of operators and consumers. Against the backdrop of the openness of data rights attributes, abandoning the defect of the specialization of competitive interests under the approach of rights, focusing on the "relativity" of the interests competition between the disputing parties, and clearly defining the legal rights enjoyed by the data scraping party and the data controlling party, the legitimacy of data scraping behavior is determined in a scenario-based balancing of interests.<sup>[5]</sup>

### **3.3 The outcome-oriented judicial path under the balance of data rights and interests**

In terms of data control, on one hand, the legitimacy of data protection rights is endowed by the efforts put into data collection and realization of data value; on the other hand, the derived value generated by data crawling will divert its data flow, particularly evident in the internet search engine industry, causing substantial substitution of the digital products and services provided by oneself, thus lowering its market competitiveness. The restrictions on data crawling set by the Robots Protocol blacklist and whitelist should fall within the scope of exercising the independent operational rights to address market competition. As for data crawling, in the era of data economy, the acquisition and sharing of data are prerequisites for the realization of the information sharing

rights of market entities. Denying others' data sharing rights will lead to unfair market competition environment due to data value monopolization, reducing the optimal allocation of social resources. The circulation of data value is essential for platforms to achieve competitive benefits. The process of reusing data resources is the bridge linking original data, generating derived data value, and acquiring market competition dynamics, thereby becoming the primary pathway for enterprise internet market innovation.

The previous one-size-fits-all standard for determining whether a violation of the Robots Protocol content is biased, has disregarded, or even suppressed, the guiding role of data circulation value in market innovation. The outcome-oriented dynamic judicial path is gradually eliminating the pathway to rights. The assessment of the legitimacy of behavior should actually be an anticipation judgment of competitive harm. Recognizing the contextualization of data unfair competition litigation and the diversity of data rights, one should appropriately consider the data competitive interests of the data acquisition party, the data protection and market competition interests of the data control party, and the data rights of consumers. In determining whether data acquisition behavior will result in substantial substitution for the data control party and disrupt the data market competition order, it is necessary to identify data scraping behavior that has a restricting effect on competition in the market as unfair competition. Therefore, adopting a dynamic, multi-dimensional data equity balancing approach, with a focus on disrupting the market competition order as an outcome-oriented recognition strategy, is most suitable.

## **4. Suggestions for optimizing the regulatory pathways for the competition in data crawling behaviours**

### **4.1 Identification of the legal nature of crawling and countermeasures**

#### **4.1.1 Drawing inspiration from experiences beyond our borders**

The United States Court of Appeals for the Ninth Circuit has been increasingly strict in its application of the CFAA authorization rules in disputes involving data scraping. The violation of website terms of use by data scrapers is not directly equivalent to a breach of authorization rules. The court has shifted its focus towards determining whether data scraping activities or restrictions on such activities may lead to unfair competition or monopolistic market consequences. In the case of *hiQ v. LinkedIn*, where LinkedIn's dominant market position resulted in hiQ being unable to obtain data from other sources and continue its operations, causing substantial harm to hiQ's competitive interests and the fairness of market competition, the court ultimately found LinkedIn's actions to constitute unfair competition. The evolving trend in the court's approach to data scraping activities, moving from a focus on compliance with authorization agreements to the effects of the behavior, reflects a dynamic development in judicial reasoning that takes into account the comprehensive balancing of interests in the world of online freedom.

The nature of web crawling protocols has never been synonymous with the ethical standards of the internet industry. Violating the Robots protocol to retrieve data and utilizing restrictions on data crawling imposed by web crawling protocols are at the core of determining unfair competition practices, particularly when it comes to the black and white lists pertaining to web crawling protocols. Driven by competitive interests, it is common for data controlling entities to refuse to share data. In disputes involving data crawling activities, platform entities often establish web crawling protocols or black and white lists to restrict the data crawling activities of others. Within the regulatory framework of the "Anti-Unfair Competition Law," the key aspect for judges to determine is whether the web crawling protocol negatively impacts the competitive order of the data market. When it comes to data retrieval, considerations such as the level of transparency, creation of

derivative value, and the uni-directionality of black and white lists in web crawling protocols should all be taken into account.

#### **4.1.2 Deny the crawling behavior that exceeds technological neutrality**

The essence of data scraping lies in web crawling technology. While technology itself possesses inherent neutrality, the "principle of technological neutrality" must not be exploited to hinder market competition. Similarly, the core of countermeasures against data scraping lies in web crawling protocols that stem from technological necessities. Operators should not overstep reasonable boundaries in restricting search engine behavior through the use of web crawling protocols. Operators should not, based on personal preferences, utilize the ambiguous legal status of "web crawling protocols" to grant themselves additional functions with the aim of unfairly excluding or limiting competition. The relationship between ICP and search engines holds significance in terms of competition law, and restrictions set by web crawling protocols directly impact the ability of both parties to attract web traffic from users. The contents and application methods of web crawling protocols and web crawling technology are influenced by vested interests, thus necessitating a skeptical attitude towards their neutrality and legitimacy. Therefore, in disputes regarding data scraping, it is imperative to focus on the fundamental functions of web crawling technology and web crawling protocols, and assess whether their application methods exceed the realms of technological neutrality and legitimacy in light of the competitive factors behind their actions.

In the realm of data extraction disputes, the insistence on the technical neutrality of web scraping technology and crawler protocols negates excessive data scraping behavior and breaks the barriers of data monopolies, achieving a balance between the two. Firstly, the competitive market in which the data scraping party operates serves as the foundation, combined with the clandestine nature of data scraping traces and the repetitiveness of capture behavior, in order to determine whether there is a predatory competitive purpose behind the scraping behavior. Secondly, from a competitive standpoint, the reasonableness of the crawler protocol as a contractual term is examined, taking into account factors such as the market scale of both data parties and the competitive consequences achieved, in order to flexibly and effectively determine the neutrality of the content of the crawler protocol, to achieve the goal of regulating market competition and safeguarding consumer interests.<sup>[6]</sup>

#### **4.2 Transition of the legal logic of competition law**

The main reason for the judicial trend towards unilateral rights protection in the context of web crawling behavior is the incomplete implementation of the governance function of competition law, which places data security protection and competition development in opposition. In fact, neither the logic of prioritizing competition order nor that of prioritizing the protection of private interests of operators is viable. Only by combining scientifically sound data protection with efficient and orderly data competition can the regulatory role of competition law in the market be properly fulfilled. Currently, the application of the "Anti-Unfair Competition Law" in cases of data crawling behavior tends to emphasize the infringement nature, with the determination of the impropriety of behavior starting from the logic of rights protection. There is an urgent need to shift the legal concept from data protection to data competition.

Data, as the fundamental resource of the information age, presents multiple attributes that are difficult to cover with traditional concepts of public law, private law, and the corresponding concepts of public power and private rights. The exercise of data rights by operators falls within the typical realm of private rights, but the exercise of these private rights carries a strong public value.

Improper exercise of data rights by operators can result in factors affecting trust in transactions such as information asymmetry, adverse selection, and moral hazards, leading to negative effects such as competition neglect, competition crowding out, and adverse selection in the online data market, which in turn can cause a domino effect of infringing on consumer legitimate rights.<sup>[7]</sup> Emphasizing competition law logic in data security protection excessively will amplify these negative effects infinitely at the societal level. Therefore, competition regulation of data crawling behavior needs to abandon the previous overly skewed concept of data security and move from a primarily protective stance to a legal logic that incentivizes competition in parallel.

### **4.3 Dynamic equilibrium of multiple interests, gradually moving towards equity equilibrium**

The protection path of judicial judgments in the past has shown clear bias, the determination of the impropriety of data crawling behaviors highlights a problem of imbalance in protecting interests, which is detrimental to maintaining a fair market competition order and has a negative impact on the innovative vitality of market participants. Therefore, shifting to a results-oriented judgment approach based on dynamic balancing of data rights of all parties is a feasible method. Market platforms limiting others' access to data through data scraping protocols essentially represents a contest between the data control party's rights to data protection and data competition and the data sharing and data competition rights of the data crawling party. Recognizing that both data crawling behaviors and data scraping restrictions are backed by legitimate legal interests, and that there is no hierarchical distinction between the data rights of all parties, any possible factors that may lead to judicial discretion with bias should be eliminated during the process of balancing rights. Competition law regulating data crawling behaviors should respect the market's own regulatory function. Regarding data crawling behaviors, they should not be prejudged as illegal or simplistically determined, but rather the criteria for judging the impropriety of behaviors under competition law need to be refined.

On one hand, the act of scraping public data is subject to multiple evaluations. The mobility of data determines the positive evaluation of acquiring public data, yet considering the information privacy rights of data users, scraping without the unilateral consent of users is deemed unethical. While data controllers rightfully hold specific data economic interests over the original data, the generation of derivative value through secondary processing post data acquisition becomes a substantial economic competitive value, granting the data scraping entity legitimacy in terms of data sharing and market competition benefits. On the other hand, in terms of black and white lists for data crawlers, it is necessary to examine whether they constitute targeted restrictions or create substantial limitations on competition for single market entities. The legitimacy of data controllers setting black and white list restrictions on specific entities accessing public data primarily depends on whether there is conduct that leverages their own market dominance to exclude potential market competitors, namely, whether their actions exhibit anticompetitive or monopolistic characteristics. However, it cannot be ruled out that the restriction of scraping activities by data controllers falls within the scope of the business autonomy of market subjects, as seen in the case of *Toutiao vs. Weibo*, where the data controller anticipated that scraping activities would result in substantial market substitution effects, and thus limiting scraping was defended as an exercise of business autonomy.

The purpose of establishing a judicial adjudication mechanism that balances multiple interests is not to set standards, but to enhance the discernibility of data scraping behaviors and the operability of competition regulations. Taking into account the technical and dynamic nature of data scraping behaviors, a comprehensive assessment of the potential anti-competitive effects of such behaviors is key to the accurate application of anti-unfair competition laws.<sup>[8]</sup> Data scraping activities involve



multiple stakeholder interests, thus creating a multi-dimensional balancing mechanism for interests is a necessary requirement in concrete terms under competition law to combat unfair competition, and is also a technical means to effectively prevent moral generalization of judicial outcomes. Under the framework of competition law analysis, it is necessary to balance the positive and negative impacts of data controllers, data crawlers, and consumers on the social competition order, based on competition governance and industry governance, make trade-offs and prioritize interests, and create a healthy and orderly market competition order.

#### **4.4 Diversified application scenarios alignment to achieve collaborative governance**

The circulation value and diversification of the sources of data rights determine the judicial appropriateness of adopting contextual data protection, rendering decisions on data scraping disputes based on specific scenarios. In our country, the protection method of competition law emphasizes individual case judgments and analogical reasoning of different cases, highlighting the extraction and formulation of rules from individual cases rather than seeking legal answers from uniform rules. The regulatory scope of competition law on data scraping behaviors is limited to general provisions, with the principled content of general provisions being relatively low in practicality. The principles of honesty and commercial ethics lack specific measurement standards, thus disputes depend on the regulation of contextualization: examining multiple factors of parties in specific scenarios, attempting to promote market competition on the basis of balancing data protection and data utilization. In determining the legality of data scraping behaviors, a series of factors need to be considered aside from constituting elements such as "violating the principles of honesty and commercial ethics" and "harming the market order of fair competition," including whether it would constitute "substantial substitution" for the relevant products and services of other operators. It is worth noting that the "Draft for Comments" stipulates "obtaining user consent" and "reasonable, moderate use" as necessary conditions for legal data scraping behaviors. Therefore, the "Draft for Comments" aims to guide judicial decisions to better achieve contextual judicial practices under consideration of diversification factors, assisting judicial authorities in achieving more unified and precise judicial rulings.

Data scraping represents a novel mode of competition emerging in the digital economy, involving multiple stakeholders and interests across various dimensions. Its legal regulation inevitably falls within the realms of intellectual property law, personal data protection law, antitrust law, and other related legal frameworks. The effective realization of the functions of competition law hinges on the collective impetus of multiple legal authorities. Therefore, only by establishing and enhancing a diverse governance and collaborative governance legal model can we optimally balance the interests of data protection, data competition, and other diverse concerns, scientifically and effectively promoting the realization of competition law functions.

#### **5. Conclusion**

The digital economy era has made data traffic competition the core of market competition. Data scraping is an effective way to enhance the competitiveness of market entities. The inherent legitimacy of data crawling protocols is not natural. The competition regulations on data crawling behavior and its restrictive actions should start from the nature of their behavior and focus on the data rights of diverse entities. The evaluation of the legitimacy of behavior nature should focus on the contextual balancing of data rights, emphasizing the impact of behavior on the market competition order and adhering to a judgment approach guided by results.

## References

- [1] Ning Lizhi, Wang Defu. *Qualitative Analysis of "Web Crawling Protocol" and its Antitrust Law Implications*[J]. *Jiangxi Social Sciences*, 2016(01): 163-165.
- [2] Cao Yang. *Research on Legal Regulation of Violations of "Web Crawling Protocol" in China*[J]. *Jiangsu Social Sciences*, 2019(03): 159-160.
- [3] Xu Ke. *Legitimacy of Data Crawling and its Boundaries*[J]. *Chinese Legal Studies*, 2021(02): 168-173.
- [4] Kong Xiangjun. *On the Era Spirit of the Revised "Anti-Unfair Competition Law"*[J]. *Eastern Jurisprudence*, 2018(01): 71-73.
- [5] Cai Chuanzi. *Regulatory Framework of Data Scraping Behavior in Competition Law*[J]. *Comparative Law Studies*, 2021(04): 176-185.
- [6] Liu Quan. *Public Nature of Online Platforms and its Realization—A Legal Perspective on the Regulation of E-commerce Platforms*[J]. *Legal Studies*, 2020(02): 45-47.
- [7] Chen Bing: *Empirical Research on Adjudication of New Types of Unfair Competition on the Internet*[J]. *Academic Forum*, 2019(05): 34-37.
- [8] Chen Bing: *Protection and Competition: Achieving the Competing Legal Function of Governing Data Scraping Behavior* [J]. *Political and Legal Forum*, 2021(06): 25-27.