



Research on Legal Supervision System for Economic Based on Big Data

Yiwen Zhou^(✉)

College of Police, Shanghai University of Political Science and Law, Shanghai, China
marieeeeew1207@163.com

Abstract. Recently, the utilization of big data for disposing the economic transactions has widely developed and achieve enormous benefits for all users. However, existing economic platforms are more concentrated on the effectiveness response and transaction amount, which ignores the legal and regulation issue in the utilization of big data techniques. Specifically, the model may leak users privacy information or dispose several illegal services for users. Therefore, we involve the concept of legal supervision mechanism by setting certain items, which can assist the platform to rid the illegal issues. In this paper, we propose a novel legal supervision model by utilizing the big data analysis tools, which can prevent privacy information leakage and ensure almost transaction is complying the presupposition legals. From our extensive investigation results and analysis, we can conclude that our proposed analysis model by utilizing big data technique can successful prevent the illegal events with reasonable computation cost.

Keywords: Legal Supervision Mechanism · Economic Platform · Big Data Technique · Response Costs

1 Introduction

With the continuous development and improvement of modern information technology and big data theory, mobile intelligent terminals have been widely used in people's daily life, and the economic transaction mode has gradually moved from offline transactions to online transactions, and has shown strong vitality [1]. Online trading platforms play an incomparable role in maximizing the utility of resources, but as a new thing, it not only facilitates life and promotes economic development, but also raises a series of legal issues [2].

While facilitating life and promoting economic development, this new thing has also given rise to a series of legal issues. A large number of enterprises enter the market, disorderly growth causes negative problems including waste of resources, environmental pollution, which may cause dissatisfaction among users and other stakeholders [3]. Whether the development of economic platforms needs to be supervised, how to supervise and regulate, how to reasonably deal with the problems between the supervision and innovation of economic platforms, and standardize the development of sharing economy to promote the development of market economy has become an urgent problem to

be solved, therefore, the study of the legal system of market supervision of economic platforms has great significance at the level of theory and system construction [4].

Specifically, deepening the research on the construction and improvement of economic platform theory and its related laws and regulations will help promote the improvement and safety of economic platforms. And with the development of the economic platform, its fields will become more and more extensive, and the fields involved will become richer and richer, resulting in many subdivisions and types [5]. Therefore, the premise of studying the legal regime of economic platform regulation is to make a new definition of its definition and the scope it covers, and to analyze the shortcomings of existing theories on this basis [6]. It is necessary to clearly and reasonably distribute the responsibilities, rights and obligations between regulators, economic platforms and consumers, which is essential for existing model to establish the path and method of legal regulation in the supervision of the economic platform market.

Big data is a method utilize to describe the large amount of data that is generated by businesses, organizations and individuals on a platform. It is a technique utilized to describe the collection, storage, analysis and visualization of large and complex datasets [7]. Indeed, the big data can also be utilized to gain insights into customer behavior, market trends and other business-related information. It are almost used to improve decision-making, optimize operations and create new products and services for certain requirements [8]. Big data is becoming increasingly important in nowadays digital world, as it provides organizations with the ability to make better decisions and gain a competitive edge.

In this paper, we initially analyze the existing economic platform legals in China, and then propose several legal items, which are utilized in proposed big data analysis model. The reminder of this paper includes the background analysis about existing legal environment and primary system parameters are shown in Sect. 2, the system framework and procedure execution are illustrated in Sect. 3, the investigation analysis and discussion are shown in Sect. 4. Finally, Sect. 5 provides the content about model conclusion and future improvement methods.

2 Preliminaries

In this section, we show the related legals in existing economic platforms and analyze the advantages and disadvantages of these legal items. Subsequently, the model main parameters in big data method are shown.

2.1 Related Legal Items Analysis

With the development and rush of foreign economic platforms, Chinese economic platform enterprises have begun to emerge. In 2012, online taxi booking such as Didi Chuxing emerged in China, followed by widespread economic and social impacts from this emerging economic platform. Due to the absence of ready-made laws and policies, private cars in private car companies have not obtained operating qualifications, and local governments prohibit private cars from accessing private car software in accordance with the Measures for the Investigation and Punishment of Unlicensed Business and

Table 1. Primary parameters illustration.

Parameter Symbols	Functions
X	Input platform data
I	Set of legal items
L	Layer of neural network
R	Identification results

the Regulations on the Administration of Taxi Driver Qualifications [9]. Some local governments have stricter rules. In particular, the Shenzhen municipal government has issued a policy prohibiting taxi drivers from using ride-hailing software while driving, and local governments such as Shanghai have introduced relevant measures to prohibit taxi drivers from using ride-hailing software during morning and evening rush hours. Its regulatory restrictions are mainly based on the old taxi supervision system, and the economic platform provides taxi services, which should be incorporated into the taxi management system, and is not allowed to operate without obtaining an administrative license [10].

With the improvement of relevant systems and the voices of all sectors of society, the understanding of economic platform regulators has been continuously evolved and developed, and more inclusive and prudent policies have been proposed to promote the innovation of the sharing economy [11]. In the document, the national development and reform commission clarifies innovative regulatory methods, and proposes to adopt a zero-regulatory attitude towards relaxing or even allowing resource providers to develop market access conditions. With the support of policies, sharing economic growth has been rapid, and Beijing and Hangzhou have successively issued guidance on regulating economic platforms.

2.2 Primary Parameters

Following Table 1 demonstrates the primary parameters and specific functions that are used in proposed artificial intelligent model.

3 Model Framework

3.1 Legal Items

Following items illustrate the used items in the proposed big data analysis model for economic platforms.

- Economic platform access conditions refer to the degree to which services, goods and capital are permitted to enter the economic platform. Economic platform access supervision refers to the examination of the qualifications of economic platforms and their business products and services based on the supply and demand conditions and development trends of the economic platform industry before external entities enter

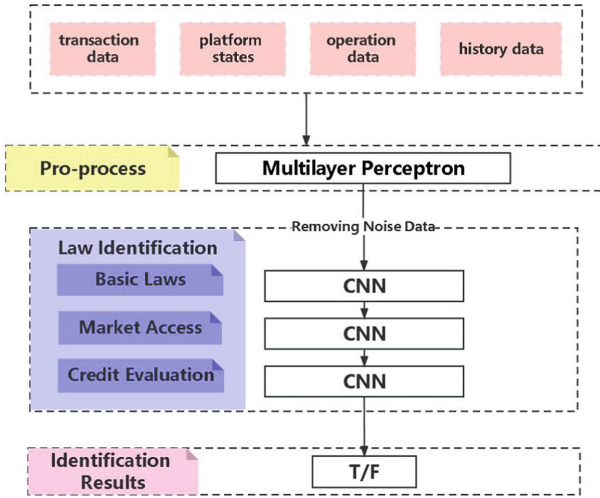


Fig. 1. Model framework for economic platform supervision.

the economic platform, and interferes with the legal activities of external entities entering the economic platform, in order to prevent excessive competition within the industry. The purpose of economic platform access supervision is to prevent excessive competition in the industry, prevent the risk-taking behavior of economic platform entities, and ensure the safe and steady operation of economic platforms.

- Credit is the basis of economic platform transactions, which mainly manifests the illegal collection, use and disclosure of personal information by platform enterprises, infringement of the privacy of personal information, and the inability of credit investigation information to accurately reflect the credit level of users due to the imperfect credit reporting system, harming the development of sharing enterprises. Credit supervision can effectively reduce the legal risks of transactions and affect the regulatory effect of the legal system for the supervision of economic platforms.

3.2 System Model

Following Fig. 1 illustrates the general framework of supervision model with three convolution neural network and a multi-layer perceptron pro-processing module.

Convolution neural network (CNN) is responsible for extracting features from the input data. It applies a convolution operation to the input data, which is a mathematical operation that extracts features from the data.

4 Experiments

4.1 Experimental Setups

We simulate the generation the required data from the economic platforms, which contain the behaviour of transaction. Through loading these data, the model can distinguish the illegal information, which is extremely discorded with other input data.

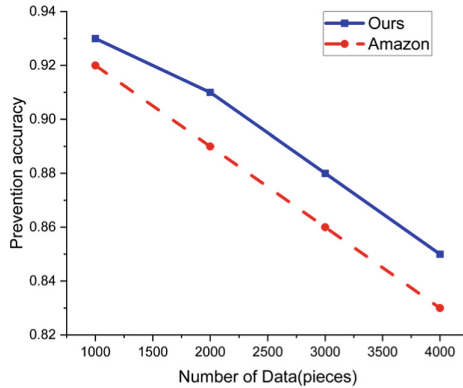


Fig. 2. Prevention accuracy comparison results.

Table 2. Computation response cost comparison results.

Parameter Symbols	Average response period/piece (second)
Ours	4.5s
Amazon	3.7s

4.2 Performance Evaluation

In performance evaluation module, we simulate the proposed model with generated data and compare with existing supervision model of Amazon platform. Following Fig. 2 demonstrates the prevention accuracy for simulation results.

Furthermore, we compare our model response time with existing Amazon model to evaluate the effectiveness. Following Table 2 demonstrates the comparison results with the average response costs.

The purpose of this experiment is to analyze the effectiveness of a legal supervision system for economic activities based on big data. The experiment will involve generating data from various sources. The data will then be analyzed using proposed model. The experiment assess the effectiveness of the legal supervision system in terms of its ability to detect and prevent economic crimes. Finally, the experiment evaluates the overall effectiveness of the system in terms of its ability to reduce economic crime and improve economic efficiency.

5 Conclusion

In conclusion, the experiment has demonstrated that a legal supervision system for economic activities model can be effective in detecting and preventing economic crimes. The system was able to identify potential areas of risk and develop strategies for mitigating those risks. Additionally, the system was able to reduce economic crime and improve economic efficiency.

References

1. Bora Debajeet K.. Rise of the sustainable circular economy platform from waste plastics: A biotechnological perspective. *MRS Energy & Sustainability*, 7(28), 2020.
2. Yunxian Li, Jinhua Liu. Exploration and Analysis on the Mixed Teaching Mode of Economic Law Course under the New Situation. *Frontiers in Educational Research*, 5(21), 2022.
3. Alessandrini Donatella, Cortes Nieto Johanna del Pilar, Eslava Luis, Yilmaz Vastardis Anil. The Dream of Formality: Racialization Otherwise and International Economic Law. *Journal of International Economic Law*, 25(2), 2022.
4. Chander Anupam, Wurst Noelle. Applying International Economic Law to Artificial Intelligence. *Journal of International Economic Law*, 24(4), 2021.
5. KANG Sungjin. International Economic Law. *Asian Journal of International Law*, 11(2), 2021.
6. BERNAL PULIDO Carlos, GUIDA Alessandra, Pulido Carlos Bernal, Guida Alessandra. Introduction to the Special Issue on Biotechnology in International Economic Law and Human Rights: Reconciling Biotechnology with Human Rights and the Protection of the Environment under International Law. *European Journal of Risk Regulation*, 12(3), 2021.
7. Marzieh Fathi, Mostafa Haghi Kashani, Seyed Mahdi Jameii, Ebrahim Mahdipour. Big Data Analytics in Weather Forecasting: A Systematic Review. *Archives of Computational Methods in Engineering*, 2021.
8. Khalid Madiha, Yousaf Muhammad Murtaza. A Comparative Analysis of Big Data Frameworks: An Adoption Perspective. *Applied Sciences*, 11(22), 2021.
9. YUAN Zhoubin. Challenges and responses of sharing economy to administrative supervision. *Hebei Law Science*, 37(4):88-96, 2019.
10. ZHENG Yi. E-hailing legislation from the perspective of the relationship between central and local legislative power is based on the Legislation Law and the Line Analysis of Government Licensing Law. *Contemporary Law*, 31(02):12-22, 2017..
11. Ruicen Liu. Analysis of constructing shared economy mode from the perspective of Internet + finance. *Academic Journal of Humanities & Social Sciences*, 2(3), 2019.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

