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Cross Border E-commerce Compliance Based on Big Data Analysis - Taking Customs Laws and Regulations as an Example

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Abstract: Cross border e-commerce, as a new economic model, has received increasing attention from countries and regions. However, due to the fact that cross-border e-commerce business involves laws, regulations, and policies of numerous countries and regions, enterprises face enormous compliance risks. Meanwhile, with the development of cross-border e-commerce, traditional trade models can no longer meet the current market demand. Big data analysis, as an emerging data processing method, has broad application prospects. This article explores the application prospects of big data analysis in cross-border e-commerce by studying the compliance issues of cross-border e-commerce. Firstly, the basic principles of big data analysis were introduced, followed by the current status of cross-border e-commerce compliance and the potential hidden issues behind it. Finally, the application prospects of big data analysis in cross-border e-commerce compliance were introduced, and relevant countermeasures were proposed. Utilize the countermeasures proposed in this article to specifically address the legal and regulatory issues that exist in existing cross-border e-commerce.

Keywords: Big data; Artificial intelligence; Cross-border e-commerce; Network data mining

1. Introduction

In the context of global economic integration, China's cross-border e-commerce has developed rapidly. However, cross-border e-commerce enterprises have repeatedly encountered quality problems such as "counterfeit goods", and some enterprises have problems such as tax evasion, "heavy expansion over management", and inadequate management, resulting in consumer interests not being protected. The promulgation of the E-commerce Law has provided new norms for Chinese cross-border e-commerce enterprises, such as platform "joint liability", government tax supervision, and consumer transaction dispute resolution. In the new situation, the transformation of China's cross-border e-commerce platforms will be centered around the E-commerce Law, and improvements will be made to the problems existing at the three levels of cross-border e-commerce platforms, government, and consumers.

In the field of big data research, Liu B utilized a new method based on big data analysis to analyze complex chemical reactions caused by electron beam radiolysis. This work provides a new method for studying high-energy electron radiolysis processes and simplifies complex chemical reactions on the basis of quantitative analysis of species changes in reactions [1]. On this basis, Sun X reviewed the MapReduce type distributed computing frameworks currently used for processing big data and discussed their problems in conducting big data analysis. In addition, a non MapReduce distributed computing framework has been proposed, which may overcome the challenges of big data analysis [2]. Zhao H proposed an asymmetric encryption method that combines blockchain technology with cryptography. The advantages of asymmetric encrypted communication include high security and ease of multi-party communication collaboration. It is applied to peer-to-peer networks formed by blockchain technology, making cross-border e-commerce records traceable across domains, data immutable, and simplified identity verification [3]. However, the above research on cross-border e-commerce compliance for big data analysis has not been combined with reality to practice, and relatively speaking, the perspective evaluation is single, the ideas are not comprehensive enough, and improvement is needed.

This article introduces the importance and functionality of using big data for cross-border e-commerce compliance research.

We have conducted in-depth discussions on research methods and applications, and used existing data to analyze current big data algorithms. We have also evaluated the risks and shortcomings that need to be faced in the future, laying a theoretical foundation for the important role of big data analysis in cross-border e-commerce compliance research.

2. Overview of Big Data

Big data is a huge data resource with a large amount of data, multiple types of data, fast growth rate, and the need for new data processing methods to achieve its application value. Technically speaking, big data is a data technology that cannot be processed by traditional collection, storage, and processing methods [4]. Big data usually has five basic characteristics: Volume: Big data usually refers to a data volume of over 10TB in size. As data grows, it also represents that various instruments can perceive more things when in use. Variety: With the increase of intelligent devices, types and the popularity of various social networks, data types are becoming more and more complex, not only traditional relational data types, but also non relational data types, including audio, web pages, videos, emails, spreadsheets and other unprocessed forms, semi-structured and unstructured data. Rapid information growth (Velocity): Traditional information considers the efficiency of information collection, storage, and mining of effective data. The information processed is usually at the TB or ZB level. When considering "super large data" and "massive data", larger volume and the formation of streaming data are important features of big data . And high data value: The data stored using big data methods has a certain value. High data accuracy: The accuracy of big data calculation or search using algorithms is very guaranteed. And these two points are also significant

The important characteristics of data.

Big data analysis is the process of analyzing and mining massive amounts of data to obtain valuable information. It can help enterprises better understand customer needs, market trends, and competitor situations, and data security issues in big data analysis are also of great concern. With the continuous increase of data volume, the risk of data leakage and data abuse is also increasing. Therefore, big data analysis needs to strengthen the protection of data and privacy, and take reasonable data security measures. Another issue is the potential data bias in the process of data collection and organization.

Deep learning algorithm is a machine learning method based on artificial neural networks. Its core idea is to achieve automatic abstraction and feature extraction of input data through the connection and learning between multi-layer neurons, and generate output results. Deep learning algorithms are widely used in many fields, such as voice, image, natural language processing, recommendation system, etc. .

Clarans algorithm

The algorithm uses sample points instead of using a sample at the center of a cluster as the center point of the mean vector. Randomly select the center point and randomly change one of the center points of multiple clusters. If the error value E decreases, replace it. Repeat the previous step multiple times and treat the final result as a local optimal solution. Repeat the above two steps multiple times to obtain multiple local optimal solutions, and the algorithm returns the optimal one.

3. Current status of cross-border e-commerce compliance research based on big data analysis

From the perspective of exports, cross-border e-commerce has expanded from low gross profit standard products such as 3C to new categories such as clothing, outdoor products, health and beauty, home gardening, and automotive parts, which will ensure new space for the development of export e-commerce. From the perspective of imports, the continuous entry of emerging markets, as well as the promotion of computer technology, gradual improvement of infrastructure, and the continuous implementation of new policies, will further expand the space for export e-commerce. Research shows that due to the further enhancement of international per capita purchasing power, increased network coverage, development of logistics level, and improvement of online payments, cross-border e-commerce will still maintain a compound annual growth rate of 30% in the coming years. In recent years, China's cross-border e-commerce imports have continued to grow, and a number of active import B2C e-commerce platforms have emerged. Shopping forms such as "overseas shopping" and overseas purchasing are prevalent. The import volume of cosmetics, skincare products, luxury goods, trendy clothing, consumer electronics, food and health products has grown strongly, but with the increasing influence of domestic world factories, the export proportion of cross-border e-commerce is much higher than the import proportion, Especially in foreign trade B2B, exports are the main driving force. With the continuous improvement of domestic cross-border e-commerce policy and institutional environment, and with the promotion of e-commerce service companies, cross-border e-commerce will deeply utilize the brand advantages of Made in China and accelerate the transformation from "Made in China" to "Domestic Marketing" and "Created in China". Due to historical factors and inadequate system construction, the comprehensive sampling rate of customs

on postal parcels is relatively low, making it impossible to carry out unpacking and inspection of the value and types of goods for each parcel. A large number of overseas Taobao express postal parcels are not actually taxed, which directly leads to the grey customs clearance situation of domestic cross-border e-commerce that does not meet the policy loopholes of commodity utilization. With the increase in the proportion of cross-border e-commerce, the necessity of opening the main gate and blocking the deviation gate, and including gray customs clearance items in legal postal supervision has further strengthened. In addition, the openness of cross-border e-commerce is conducive to ensuring genuine sales, reducing transportation costs, and improving after-sales systems, which is an inevitable direction for the future development of cross-border e-commerce. In the future, with the continuous promotion of the openness of cross-border e-commerce pilot projects and the accumulation of rich regulatory experience, the sunshine model will be streamlined and institutionalized. However, with the widespread application of big data and artificial intelligence technology in cross-border e-commerce, it has also brought some new issues, such as data privacy and security issues. Enterprises need to take effective measures to protect consumer privacy and data security, and comply with relevant laws and regulations.

4. Conclusion

The regulation of cross-border e-commerce has great uncertainty, and customs supervision is difficult. The complexity of cross-border e-commerce regulation is mainly reflected in two aspects: firstly, the impact of customs internal controls on the compliance of cross-border e-commerce. In the development process of cross-border e-commerce, scientific analysis is required for the construction of customs' internal environment and regulatory system. As an important component of cross-border e-commerce, customs' internal management and control are important guarantees for the development of cross-border e-commerce. Therefore, further improvement and soundness are needed in cross-border e-commerce. The second is the impact of cross-border e-commerce customs on e-commerce supervision. The development time of the cross-border e-commerce industry is relatively short, and the relevant laws and regulations are not yet perfect, leading to many problems in the supervision of cross-border e-commerce in China, which makes the supervision of the cross-border e-commerce industry more difficult. Customs need to strictly regulate cross-border e-commerce, and in cross-border supervision, it is necessary to strengthen customs risk management and prevention of cross-border e-commerce risks for cross-border e-commerce enterprises. There is a certain similarity between customs internal control and cross-border e-commerce supervision, mainly because the supervision of cross-border e-commerce enterprises is cross regional, and there is a connection between customs supervision and customs supervision. Therefore, cross-border e-commerce enterprises need to understand the role of customs in cross-border supervision when conducting cross-border transactions, and based on this, develop corresponding regulatory plans to ensure the development of cross-border enterprises.

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