Research on Problems and Measures of E-commerce Big Data Application Statistics

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Abstract

With the deepening of modernization, Internet technology is also showing a new state of rapid development. This era background has laid a strong foundation for the efficient development of e-commerce, and e-commerce has become the backbone to help local economic development. In the development of e-commerce, we will also encounter various thorny problems, including the statistical work of e-commerce big data application. The effectiveness of this work directly affects the sustainable and healthy development of e-commerce. Based on this, this paper discusses the related issues of e-commerce big data application statistics. Firstly, the research background is clarified, then the value of e-commerce big data application statistics is discussed, the disadvantages of e-commerce big data application statistics are analyzed, and finally the countermeasures are put forward, aiming at optimizing the quality of e-commerce big data application statistics and providing reference for the long-term development of e-commerce.

Keywords

E-commerce; E-commerce Big Data; Applied Statistics.

1. Introduction

With the enhancement of scientific and technological strength, the Internet era is striding forward. In the context of the Internet, new economic formats and new models represented by e-commerce have been popularized one after another, and the excellent situation of online and offline integration and development has come in an all-round way. With the further development of e-commerce, the sales of e-commerce continue to increase, and the traditional data analysis can no longer meet the needs of the continuous development of e-commerce. Making full use of big data technology to realize the statistical analysis of data information of e-commerce platform has become the key content of e-commerce.

2. Research Background

E-commerce big data application statistics is a system that uses information means to realize the collection, integration and analysis of e-commerce platform big data. Scientifically count the subject information, transaction information, logistics information and capital information related to e-commerce and form an e-commerce database on the basis of comprehensive analysis. Data has long been a national basic strategic resource. The wide application of big data technology has brought new opportunities for the development of e-commerce industry. E-commerce has a far-reaching impact on regional production, circulation and consumption, and it is the key path to form big data and highlight the value of data. It is an urgent task for government statistical departments at all levels to do a good job in the statistical application of e-commerce big data scientifically and efficiently, objectively and accurately complete the accounting of e-commerce sales, retail sales and added value, keep pace with the times, and improve and supplement the shortcomings and drawbacks of e-commerce statistics in China.

3. Basic Overview of E-Commerce Big Data

3.1. Basic Characteristics of E-Commerce Big Data Environment

(1) Analysis of the characteristics of digital operation

China's current development situation benefits from the efficient development of the Internet environment and the good status of e-commerce big data environment. Under such a development situation, the characteristics of e-commerce big data environment are typical data operation situation, which is mainly due to the efficient support of big data technology and the establishment of system and standardization criteria in e-commerce operation, so that all links can develop in the direction of digitalization, and the characteristics of digital operation can be deeply reflected [1]. In addition, under the big data analysis, e-commerce can carry out analysis and decision-making work more reasonably and standardly, which has a profound impact on the rapid development of enterprises and also provides conditions for the healthy development of the industry. Although the virtual characteristics of e-commerce digital operation are obvious, and the operation mode adopted is highly abstract, relying on the rational use of big data, the transparency and concreteness of enterprises' operations at all stages are better, which lays the foundation for the improvement of e-commerce operation quality and efficiency [2]. In addition, e-commerce companies benefit from the development of big data. From the beginning of purchasing raw materials to the completion of accounting, they all emphasize dataization. The reason is that big data technology has strong collection ability and can collect quite rich data and information. The collected data will be systematically analyzed and integrated, and the general direction of e-commerce enterprise operation will be defined, and the good state of digital operation will be presented. However, it is worthy of special attention that in the process of continuous development of e-commerce, in order to improve the operational efficiency of enterprises, the actual needs of consumers must be fully considered, which is also the target of enterprise operation process. Therefore, in the operation link, the majority of e-commerce companies must clearly understand the consumption tendencies and preferences of different consumer groups in advance, grasp the consumption needs of different consumer groups, and combine "needs" to expand "supply" to ensure that the marketing model and operation strategy formulated are more targeted and instructive [3].

(2) Vertical characteristics

Vertical feature is the basic feature of e-commerce big data environment, which is formed by vertical integration of industrial chain and information resources. As a basic feature of e-commerce big data environment, verticalization affects e-commerce industry. Summarize the vertical characteristics, which are shown in the following aspects. First of all, data is vertically integrated. Under the background of the Internet, the characteristics of e-commerce big data environment vertically integrate data resources. Relying on big data to analyze and process data information in time, in this case, vertical integration features play an irreplaceable role in ensuring the efficient sharing of information resources. Secondly, under the background of vertical industrial chain and data integration, communication and interaction between enterprises are smoother, and exchanges and cooperation between enterprises are easier, but it will have different degrees of impact on downstream enterprises. When integrating data, the distance between e-commerce and consumers is shortened, and enterprises know the real needs of consumers better [4]. In addition, the information dissemination speed is fast, the authenticity and efficiency are good, and the e-commerce industry chain and business strategy are vertically optimized efficiently, which provides assistance for the better survival and development of enterprises. Consumer demand is more diversified, so in the construction of industrial chain, the majority of e-commerce companies must carefully consider the actual situation of users, do a good job in optimizing and adjusting product design strategy and enterprise operation direction in combination with changes in demand, and promote the

enhancement of competitive advantages of the majority of e-commerce companies. Upstream enterprises in the industrial chain do not need to consider this issue, because the main job of upstream enterprises is to improve the level of product structure [5]. Finally, the vertical characteristics of the industrial chain have obvious two-sided characteristics, and the downstream industrial chain enterprises take flexible measures according to specific needs, while the upstream industrial chain enterprises only need to do a good job in improving the product structure.

3.2. Research on the Development of E-Commerce Big Data

(1) Personalized development

In the development of e-commerce big data, personalized development is the key to ensure the enhancement of competitive advantage, which is also the key to ensure the efficient operation of e-commerce enterprises. Personalized development is the basic direction of e-commerce big data development. In the traditional sense, the difficulty of enterprise marketing work is information collection, which can't grasp the quality of consumers in the first time, so it can't get accurate consumer information and hinder personalized service. However, in the information age, e-commerce relies on big data to collect user information more easily, and it is more convenient to transmit information and data. Thanks to the support of big data, e-commerce fully grasps the browsing, collection and consumption of users, and the shopping guide service provided to consumers is more personalized [6]. Only by increasing the sales volume and turnover of the majority of e-commerce, can we provide them with more economic benefits, get more sufficient development financial support, and of course provide a solid guarantee for their personalized development.

(2) Hierarchical development

The Internet era provides assistance for the rapid development of e-commerce. Under the internet situation, e-commerce keeps pace with the times and strengthens the transformation. The hierarchical characteristics of e-commerce are more obvious, and e-commerce giants have emerged. Analysis of the overall situation of e-commerce development shows that e-commerce giants occupy most of the market, and small-scale e-commerce enterprises have neither capital nor market, and neither overall service nor sales strategy has much competitive advantage. Therefore, the development of e-commerce data shows significant hierarchical characteristics.

(3) Structured development

The existence of big data technology has further aggravated the contradiction between e-commerce, and the industry competition has become increasingly fierce. The sustainable development and efficient work of the industry need the help of big data technology. Therefore, the majority of e-commerce companies must pay special attention to the collection of data and information and fully grasp the needs of consumers. Give full play to the advantages of big data technology support and emphasize the development of e-commerce information in a structured direction. Structured development makes the standardization level of e-commerce business process higher, and e-commerce continues to develop in the direction of standardization, resulting in more prominent economic benefits and practical value. In the industrial chain structure of e-commerce, upstream enterprises do a good job in analyzing information and data in combination with the actual situation of downstream enterprises. However, the analysis work has not realized the structuring of user information, and the improvement of the structuring level of e-commerce information makes the value of data information continuously improve. Therefore, to emphasize the efficient development of e-commerce big data, we must fully recognize the structural development direction [7].

4. The Necessity of E-Commerce Big Data Application Statistics

4.1. Meet the Requirements of E-Commerce Development in Various Regions.

With the rapid development of the socialist market economy, the value logistics industry has become more and more developed, and the richness of China's e-commerce resources has further improved, and e-commerce has also ushered in more development opportunities. In recent years, the number and scale of e-commerce transactions, express delivery and cross-border express delivery in various regions have shown explosive growth. In the context of the rapid development of e-commerce economy in various regions, it is necessary to establish an effective statistical norm of e-commerce in the statistical field. Relying on this norm, we will comprehensively and carefully analyze the promotion value of regional e-commerce development to the overall economic and social development, and provide a core basis for the future economic development direction of various regions [8].

4.2. Meet the Needs of E-Commerce Monitoring in Various Regions

The rapid development of e-commerce economic model has greatly supplemented the disadvantages of traditional statistical investigation methods. The shortcomings of traditional statistical investigation methods are as follows: First, most industries involve e-commerce business model, but they cannot achieve all-round coverage; Secondly, the development mode of statistical objects is mainly online and offline mixed development mode, and it is difficult to distinguish these two parts of data; Finally, the data openness of some e-commerce platforms is not high, which makes it difficult to obtain the corresponding data [9]. In addition, there are few statistical data accounting methods specifically for the e-commerce industry. Based on these problems, it is necessary to introduce big data application statistical methods efficiently.

4.3. Further Standardize the Online Sales Market

At this stage, the lack of real experience makes some consumers question the quality of some products on the e-commerce platform. Improve the statistical level of e-commerce big data application, record and feedback the relevant information of the corresponding products in the first 1 km and the last 1 km, effectively guarantee the product quality, help improve the standardization level of the online sales market, better serve the vast number of consumers, and let consumers get a better consumption experience [10].

4.4. Achieve the Goal of Refined Management of E-Commerce Business Entities

After the development of e-commerce big data application statistics, in addition to regional departments making full use of relevant data information for high-quality management, the majority of e-commerce business entities can rely on big data statistics results to achieve the purpose of broadening the breadth and depth of product data research in e-commerce industry [11]. Fully consider the specific needs of the vast number of consumer groups, and at the same time consider market competition and future iterative updating and other aspects of work, lay the foundation for the next work, ensure the accurate and efficient development of product development and marketing, enhance economic benefits, and help the sustainable and healthy development of regional economy.

5. Problems in E-Commerce Big Data Application Statistics

5.1. The Statistical System of E-Commerce Data Needs to be Optimized and Improved.

Judging from the current situation of e-commerce big data application statistics, the situation is not optimistic. E-commerce in all regions is developing head-on, and high coverage, multiple business entities and small-scale business entities are the commonalities of e-commerce. There

are also some e-commerce business entities that have no fixed business premises. Due to frequent movements, it is impossible to conduct accurate data statistics on these entities, and statistical omissions are common. At the same time, small-scale e-commerce business entities often fail to provide accurate accounting statements, so that the sales obtained by these entities are excluded from statistical information. In addition to the small-scale e-commerce business entities, large-scale e-commerce also has this problem. Some large-scale e-commerce companies deliberately evade taxes and do not cooperate with the declaration of real data, so it is difficult for statistical departments to judge the authenticity of the reported data, which makes the statistical value less than the real value when counting the retail sales of social consumer goods in this region [12]. In addition, management departments at all levels have no unified requirements for e-commerce statistical standards, which also has an impact on the quality of statistical data.

5.2. E-commerce Big Data Sample is Not Perfect

When collecting and counting the data information of e-commerce business entities, the statistical department pays special attention to the reports and account information provided by the business entities, but ignores the contents published by the business entities on social platforms, which often cover a large number of data contents related to the e-commerce business entities, and these data contents have strong interactivity and industry value. However, the statistics department did not pay attention to the statistics of this part of the content, so this part of the data was not used reasonably, and the situation of statistical information distortion frequently appeared. 4.3 The development and utilization of e-commerce data in grass-roots areas is limited.

At present, e-commerce business entities are widely distributed in rural areas, but compared with urban areas, rural e-commerce has its own particularity. The data information is held by grass-roots government departments, e-commerce platforms and business entities, and the data information has not been effectively shared, that is, there is a significant "information island" phenomenon, which even exists among government departments, and the databases held by each department are different, which makes statisticians work when they integrate, analyze and utilize all the information. At the same time, there is a shortage of professional staff in the statistical departments in the grassroots areas. The software and hardware conditions are relatively backward in both data collection and data analysis, and many data resources have not been developed and utilized efficiently at all, thus the efficiency of the application statistics of e-commerce big data has never been improved.

6. Measures to Improve the Statistical Quality of E-Commerce Big Data Applications

6.1. Do a Good Job in Statistical Monitoring of E-Commerce Data

Through the above analysis, we can clearly realize that the current situation of e-commerce big data application statistics is not optimistic, and there are many outstanding problems. To improve the statistical quality of big data application, we must carry out the statistical monitoring of e-commerce data in place. Each region needs specific analysis of specific problems, and attaches great importance to the technical level. Realize the efficient integration of new technical means, such as artificial intelligence technology, and realize the construction of a comprehensive information system integrating the collection, integration and analysis of e-commerce big data. At the same time, consider the specific reality, improve the e-commerce big data application statistics system and strategy, truly realize the orderly and smooth development of e-commerce big data application statistics, and improve the standardization of e-commerce big data application statistics. In addition, the statistical monitoring of e-

commerce data should not rely solely on online mode, but also emphasize the development of offline investigation and monitoring, and emphasize the efficient collaboration between online and offline. Carry out offline statistical work, choose the strategy of combining comprehensive survey with sampling survey, and carry out "carpet survey" around the core e-commerce park. For grassroots areas, you can choose the mode of random sampling survey to fully grasp the current situation of e-commerce business, license qualification, entity, online store, website and other multiple data information, and emphasize the organic combination of offline detection results and online detection results to achieve the purpose of comprehensive and detailed monitoring.

6.2. Realize the Optimization and Innovation of E-Commerce Big Data Collection Methods

It is a difficult point to ensure the accurate, comprehensive and efficient collection of data information of e-commerce business entities. We are committed to solving this problem and realizing the optimization and innovation of e-commerce big data collection methods. The specific methods are as follows: First, make full use of new technical means, give full play to the advantages of network robot technology, take the form of keyword search, do a good job in collecting the basic situation of e-commerce business entities on e-commerce platforms on a regular basis, and at the same time do a good job in carefully sorting out the collected data and information, and classify them according to industries, so as to facilitate the subsequent statistical work; Secondly, for the collected data, the information comparison work will be promoted in time to ensure that the information of e-commerce business entities is consistent with the registration information, and a complete directory database of e-commerce business entities will be formed; Finally, the detailed information of e-commerce business entities and the monitoring data security matters of relevant departments are collected normally to make better use of the detailed data information.

6.3. Committed to the Construction of E-Commerce Big Data Center

Judging from the current situation, the scattered e-commerce business entities need to take the e-commerce public service platform as the benchmark, systematically integrate the data of the business entities, and realize the smooth construction of the e-commerce big data center with the trinity of e-commerce business entities, big data and consumers, realize efficient data sharing among all parties, and do a good job in timely feedback of data information.

6.4. Promote the Integration of E-Commerce Data Information System.

The statistical work of e-commerce big data application is comprehensive, and it is inseparable from the efficient cooperation of various departments and fields. Therefore, it is very important to improve the integration degree of e-commerce data information system. To ensure the smooth realization of this goal, government departments at all levels need to give full play to their guiding advantages, devote themselves to the construction of more transparent, open and fair e-commerce and big data information systems, ensure the efficient docking between departments and between departments and enterprises, and effectively combine online and offline to eliminate the phenomenon of information islands. At the same time, make full use of the information system to do a good job of comparing and verifying the collected e-commerce big data, so as to continuously improve the data quality and lay the foundation for the development of other big data applications.

7. Concluding Remarks

The current situation of e-commerce big data application statistics is not optimistic, which directly affects the sustainable and healthy development of e-commerce industry. Relevant

departments and e-commerce business entities attach great importance to this issue, strengthen research based on their own reality and specific environment, clarify the specific problems existing in the development of e-commerce big data application statistics, and take targeted solutions to help the sustainable development of local e-commerce economy.

References

[1] Xu Kai. research on e-commerce big data mining and application based on association rules [D]. Xijing institute, 2022. doi: 10.27831/d.cnki.gxjxy.2022.200210000606.

[2] Chen Yue. Exploring e-commerce big data in the Internet age [J]. Neijiang Science and Technology, 2022,43(10):125+155.

[3] Cheng Xinwei, Yue Zhonggang. Research on short-term business risk prediction of agricultural products based on e-commerce big data-taking family-run pear growers as samples [J]. journal of business economics, 2022 (09): 16-29. DOI: 10.14134/j.cnki.cn33-1336/f.2022.

[4] Bi Hao. Research on the problems and measures of e-commerce big data application statistics [J]. China Sankei, 2022(12):55-57.

[5] Zhang Bing. The impact of the flexibility of electronic coupons on the economic benefits of enterprises-based on the model construction of an e-commerce big data [J]. Accountant, 2022 (11): 23-25.

[6] Yi Yaqiong. Analysis of cross-border e-commerce big data operation and maintenance-taking AliExpress fishing products industry as an example [J]. Times Trade, 2022,19 (01): 25-28.doi: 10. 19463 /j.cnki.sdjm.2022.01.006.

[7] Liu Xiaofei. Research on the scheme of e-commerce data collection under the background of big data [J]. China New Communication, 2021,23(08):104-106.

[8] Zhang Yi. Discussion on financing mode of small and micro enterprises under e-commerce big data finance [J]. Times Finance, 2021(08):49-51.

[9] Xing Genshang, Lu Fang, Luo Dingti. Simulation analysis on the evolution of e-commerce big data under government supervision [J]. Journal of Hunan University of Technology, 2021,35(02):65-72.

[10] Wang Shuai. Small and medium-sized e-commerce big data marketing tool selection and implementation process research [J]. Journal of Henan Institute of Technology, 2021,29(01):39-43.

[11] Lin Lin. Research on the application of big data technology in cross-border e-commerce field [J]. Inner Mongolia Science and Technology and Economy, 2020(24):51-52.

[12] Liang Xiaoyin. Characteristics and development of e-commerce big data environment under the background of Internet [J]. Modernization of shopping malls, 2020 (24): 35-37. DOI: 10.14013/ j. cnki. scxdh.2020.24.013.