

Research on The Evaluation System of Fresh Agricultural Products Cold Chain Logistics Service Quality in the Context of Electronic Commerce

Bing Han¹, Zunirah Mohd Talib^{2, *}, Shanshan Zhang¹

¹PhD Candidate, Graduate School of Management, Postgraduate Centre, Management & Science University, 40100, Selangor, Malaysia

²Professor, Dr, Graduate School of Management, Postgraduate Centre, Management & Science University, 40100, Selangor, Malaysia

* Corresponding author: Zunirah Mohd Talib (Email: zunirah@msu.edu.my)

Abstract: This paper studies the service quality evaluation system of fresh agricultural products cold chain logistics in the context of e-commerce, constantly improve and optimize it, and ensure its effective implementation, which can not only improve the service quality, but also effectively promote the healthy development of fresh agricultural products cold chain logistics in the context of e-commerce. From this study, the optimization of the service quality evaluation system can be realized from the establishment of a sound index system, the realization of a scientific and reasonable evaluation method, the strengthening of the evaluation process control, the timely feedback of the evaluation results and the strengthening of the application of the results, in order to better promote the development of fresh agricultural products cold chain logistics in the context of e-commerce.

Keywords: E-commerce, Fresh agricultural products cold chain logistics, Service quality, Evaluation system.

1. Introduction

Along with the rapid development of the Internet, e-commerce is also rapidly penetrating into all walks of life. Electronics, apparel, beauty, graphics, virtual goods and other categories of e-commerce market segments tend to saturate, the e-commerce enterprises are also constantly exploring to capture new categories of market. With the rise of the "lazy economy", fresh products on e-commerce platforms have become a new area of e-commerce development. At present, China's fresh food e-commerce market is still in the formative stage, and the operation mode is still in the exploration stage. The typical operation mode is front warehouse, but the mode is still in the development stage[1].

With the expansion of fresh e-commerce market scale, China's fresh agricultural products cold chain logistics market is also in a high-speed development stage. According to the data of China Logistics Procurement Network, by 2021, the total amount of China's cold chain logistics exceeds 8 trillion yuan, the market size of cold chain logistics reaches 458.6 billion yuan, the number of logistics market entities exceeds 36,000, star logistics enterprises exceed 100, the total amount of cold chain logistics reaches 302 million tons, the number of refrigerated vehicles is 341,400, and the capacity of cold storage is 196 million cubic meters. The data shows that China's cold chain logistics market is still in the stage of "rapid growth and oversupply". However, China's cold chain logistics industry as a whole started late and is still in the primary development stage compared with the level of cold chain logistics in developed countries[2].

Although fresh agricultural products have the characteristics of "immediate need and high frequency", cold chain logistics is also one of the important issues that limit the development of fresh e-commerce. At present, fresh produce e-commerce platform enterprises lack scientific and effective service quality evaluation standards to accurately evaluate their cold chain logistics service level, and there is little literature and research on the evaluation of cold chain

logistics service quality of fresh produce in e-commerce platforms in academia. Therefore, using scientific methods to study the evaluation of cold chain logistics service quality of fresh produce in the context of e-commerce will not only help fresh produce e-commerce enterprises to measure the overall level of their cold chain logistics service quality, but also pinpoint the deficiencies in cold chain logistics service and improve them in a targeted manner, so as to enhance their market competitiveness.

2. Problems of Fresh Agricultural Products Cold Chain Logistics Service Quality Evaluation System in The Context of E-commerce

2.1. Inadequate evaluation index system

In the context of e-commerce, the problem of unsound service quality evaluation index system of fresh agricultural products cold chain logistics is more prominent. It is mainly reflected in the following aspects: First, the indexes are not comprehensive. The current cold chain logistics service quality evaluation index system may have omissions, for example, certain key links and indicators may be overlooked, such as the quality of logistics facilities, the qualification of drivers and service attitude, which all have an important impact on the cold chain logistics service quality. Second, inconsistent indicator standards; due to the lack of a unified indicator system, different evaluation agencies and enterprises may use different indicators to assess the quality of cold chain logistics services. This may lead to inconsistent evaluation results, making it difficult for consumers to compare and select different cold chain logistics service providers. Third, the weight of indicators is unreasonable. The weight of each indicator in the current indicator system may not be reasonably calculated and evaluated scientifically. If certain important indicators are given lower weights or certain minor indicators are given too high weights, it may lead to the evaluation results not matching with the actual situation.

Fourth, the indicators are not accurately measured. In the actual cold chain logistics service, it is difficult to fully control the environmental factors, such as weather and traffic conditions, which will have certain influence on the measurement of indicators. If the measurement is not accurate, it may lead to the error and unreliability of the evaluation results[3].

2.2. Unscientific evaluation methods

The problems of unscientific evaluation methods of fresh agricultural products cold chain logistics service quality evaluation index system in the context of e-commerce are mainly as follows: First, the evaluation methods are not comprehensive. The evaluation method may be too simple, relying on only one or two indicators, without considering other important factors, such as service response speed, transportation safety, etc. Secondly, the evaluation methods are too subjective. Some evaluation methods may be too subjective, such as evaluation based on consumer feedback, there is subjectivity and bias of consumers' evaluation of service quality. Third, inaccurate data sources. Evaluation methods may rely on inaccurate data sources, such as data collected by evaluation agencies may have errors, or data from consumer feedback may be inaccurate. Fourth, the different needs of different fresh agricultural products are not taken into account: different fresh agricultural products require different transportation conditions and environments, and if the evaluation method does not take this into account, it may result in the evaluation results not matching with the actual situation[4].

2.3. Lack of rigor in the evaluation process

The evaluation process of fresh agricultural products cold chain logistics service quality evaluation index system in the context of e-commerce is not rigorous mainly in the following aspects: first, data collection is not comprehensive, in the evaluation process, there may be some important data omission or inaccurate collection, which will lead to the inaccuracy and incompleteness of the evaluation results; second, data analysis is not scientific, in the evaluation process, there may be the evaluation of In the evaluation process, there may be unscientific data analysis and processing, such as unreasonable statistical methods, insufficient data samples, inaccurate analysis models, etc., which will affect the reliability and accuracy of the evaluation results; thirdly, the evaluation standards are unreasonable, in the evaluation process, there may be unreasonable evaluation standards, such as the criteria are not formulated rigorously, evaluation indicators are not sufficient, etc., which will affect the objectivity and accuracy of the evaluation results[5].

2.4. Lack of timely feedback on evaluation results

The feedback of the evaluation results of the service quality evaluation index system of fresh agricultural products cold chain logistics in the context of e-commerce is not timely, mainly in the following aspects. First, the lack of timely feedback mechanism, the evaluation results release time is not clear, logistics enterprises can not timely understand the problems of their own service quality; second, the feedback information is incomplete, the lack of detailed evaluation reports and improvement recommendations, it is difficult to help logistics enterprises understand and improve the service quality problems; third, the feedback information is not

visualized, lack of intuition, making it difficult for logistics enterprises to fully understand their own service quality problems .

2.5. Inadequate application of evaluation results

The application of the evaluation results of the service quality evaluation index system of fresh agricultural products cold chain logistics in the context of e-commerce is not in place, mainly in the following aspects: First, the evaluation results cannot guide logistics enterprises to improve the service quality. The evaluation results lack specific and operable improvement suggestions, which makes it difficult for logistics enterprises to improve service quality in a targeted manner according to the evaluation results; secondly, there is a lack of supervision and evaluation mechanism. The lack of supervision and evaluation mechanism for logistics enterprises to improve service quality by evaluation agencies makes it impossible to get timely feedback on the application effect of evaluation results. Third, the existence of intermediary links in the application chain affects the communication and application of evaluation results. For example, the participation of intermediaries such as third-party platforms and logistics and distribution enterprises makes it impossible to directly communicate the evaluation results to producers and consumers, which affects the application effect of the evaluation results.

3. Research on the Optimization Measures of Fresh Agricultural Products Cold Chain Logistics Service Quality Evaluation System in The Context of Electronic Commerce

3.1. Establish a sound evaluation index system

In order to establish a sound evaluation index system for the quality of fresh agricultural products cold chain logistics services in the context of e-commerce, a set of comprehensive, unified and scientific evaluation index system needs to be established, and the accuracy and reliability of the data should be strengthened in the evaluation process. At the same time, it is necessary to assign weights to different indicators to ensure that the evaluation results can truly reflect the quality level of cold chain logistics services. Specifically, it is as follows: first, organize experts to design indicators, and invite experts from logistics industry, consumer representatives, scholars and representatives from relevant government departments to form an expert group to jointly design the evaluation indicator system. This can fully consider the needs and interests of all parties and ensure the comprehensiveness and scientific nature of the index system; second, introduce a standardized index system, draw on the index system of relevant domestic and foreign standards, such as ISO quality management system, International Logistics Association (IATA) logistics standard indicators, etc., and make appropriate adjustments and optimization to ensure the authority and reliability of the evaluation index system; third, pay attention to the index weight In the evaluation index system, the setting of the weight of each index should fully consider the actual needs and effects, and adopt scientific methods for weight distribution to ensure that the importance of each index can be reasonably reflected; fourth, establish

evaluation institutions and standards, establish cold chain logistics service quality evaluation institutions and standards to promote the continuous optimization of service quality through the evaluation and supervision of logistics enterprises, and at the same time improve the credibility and reliability of evaluation. Fifth, promote the application of new technologies: with the development of information technology, technologies such as Internet of Things, cloud computing and big data can be applied to realize real-time monitoring and evaluation of cold chain logistics service quality, improve the scientificity and objectivity of the index system and enhance the level of service quality.

In summary, for the problem of unsound service quality evaluation index system of fresh agricultural products cold chain logistics in the context of e-commerce, comprehensive governance and optimization are needed from multiple perspectives to achieve a scientific, comprehensive, objective, accurate and reliable index system.

3.2. Adopt scientific and reasonable evaluation methods

In selecting the evaluation method, a set of scientific, comprehensive, objective, accurate and reliable evaluation methods needs to be established to ensure that the evaluation results truly reflect the actual situation of cold chain logistics service quality. The evaluation method should fully consider customer needs and expectations, while taking into account the interests of logistics service providers and consumers, continuously optimize and improve the evaluation system, and enhance the reliability and accuracy of the evaluation method. At the same time, evaluation agencies and service providers should carry out quality control and data analysis of evaluation data to ensure the scientific and objective nature of evaluation results.

3.3. Strengthen the control of evaluation process

In order to solve these problems, a set of scientific, comprehensive, objective, accurate and reliable evaluation methods needs to be established and the rigor of the evaluation process needs to be ensured. Firstly, evaluation agencies and service providers should establish a perfect data collection and management system to ensure the accuracy and comprehensiveness of data; secondly, evaluation agencies and service providers should adopt scientific data analysis methods to ensure sufficient data samples, reasonable statistical methods, accurate analysis models, etc.; furthermore, evaluation agencies and service providers should reasonably formulate evaluation standards, fully consider the influence of different factors, and continuously optimize and improve the evaluation standards; finally, evaluation agencies and service providers should make a set of scientific, objective, objective and reliable evaluation methods and ensure the rigor of the evaluation process. Finally, evaluation agencies and service providers should conduct strict quality control on the evaluation process to ensure the objectivity, accuracy and reliability of the evaluation results.

3.4. Timely feedback on evaluation results

The untimely feedback of the evaluation results of the service quality evaluation index system of fresh agricultural products cold chain logistics in the context of e-commerce may lead to the lack of feedback on the improvement of

service quality, which makes it difficult to correct deficiencies and improve service quality in a timely manner. To this end, the evaluation agency should formulate a detailed schedule for the publication of evaluation results and announce the evaluation results to the logistics enterprises in a timely manner, so that the enterprises can understand their service quality status in a timely manner; in addition, the logistics enterprises can set up a self-inspection mechanism to regularly evaluate the service quality by themselves and feedback the evaluation results to the evaluation agency, so as to discover and correct the problems in a timely manner; furthermore, a third-party regulator should be introduced to Secondly, the evaluation agency should optimize the evaluation process, improve the feedback efficiency, and provide the evaluation results and improvement suggestions to the logistics enterprises as soon as possible, so as to promote the enterprises to improve the service quality as soon as possible; finally, through the use of visualization tools, logistics enterprises can understand their own service quality situation more intuitively. In order to correct the deficiencies and improve the service quality level in time.

3.5. Strengthen the application of evaluation results

In view of the problem of inappropriate application of evaluation results of fresh agricultural products cold chain logistics service quality evaluation index system in the context of e-commerce, the following measures can be taken: first, provide specific and operable improvement suggestions. According to the evaluation results, the evaluation agency should provide specific and operable improvement suggestions to help logistics enterprises improve service quality in a targeted manner; second, establish a supervision and evaluation mechanism. The evaluation agency should establish a supervision and evaluation mechanism to track the improvement of service quality of logistics enterprises and provide timely feedback on the evaluation results, so that the application effect of evaluation results can be monitored and evaluated; third, adopt multiple channels to directly communicate the evaluation results. Evaluation agencies should directly communicate the evaluation results through various channels, such as publicizing the evaluation results on the third-party platform and giving feedback to logistics enterprises, so that producers and consumers can understand the evaluation results in time; fourth, strengthen information sharing and establish a joint disciplinary mechanism. Evaluation agencies, logistics enterprises and third-party platforms should strengthen information sharing and establish a joint disciplinary mechanism to take disciplinary measures against logistics enterprises with low service quality to promote continuous improvement of service quality.

In conclusion, in the evaluation index system of fresh agricultural products cold chain logistics service quality in the context of e-commerce, it is crucial to apply the evaluation results in place. Evaluation agencies should provide specific and operable suggestions for improvement, establish supervision and evaluation mechanisms, adopt multiple channels to directly communicate evaluation results, strengthen information sharing, and establish joint disciplinary mechanisms to promote continuous improvement of service quality.

4. Conclusion

The rapid development of e-commerce puts forward new requirements and challenges for fresh agricultural products cold chain logistics. In the development of fresh agricultural products cold chain logistics, the quality of logistics services is a decisive factor for its long-term development, which is directly related to the future of cold chain logistics enterprises. The evaluation system of service quality of fresh agricultural products cold chain logistics in the context of e-commerce, continuous improvement and optimization, and ensure its effective implementation, can not only improve the service quality, but also effectively promote the healthy development of fresh agricultural products cold chain logistics in the context of e-commerce. From this study, the optimization of the service quality evaluation system can be realized from establishing a sound index system, realizing a scientific and reasonable evaluation method, strengthening the control of the evaluation process, providing timely feedback on the evaluation results and strengthening the application of the results, so as to better promote the development of fresh agricultural products cold chain logistics in the context of e-commerce.

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