

Empirical Research on the Performance Evaluation of Logistics Enterprises

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Abstract

The paper analyze the logistics enterprise's financial date using factor analysis, and analysis to questionnaire investigation of financial data for analysis using the hierarchical?finally build the logistics enterprise performance evaluation index system?determined the different

Index terms— logistics enterprise?performance evaluation, analytic hierarchy process(AHP), factor analysis method(AHP), empirical analysis.

1 Introduction

haw Arch was considered the first to propose the logistics concept, and the practical exploration of the scholars. In 1915 he first had a number of issues in the market circulation and pointed out that the important part of enterprise circulation was to create demand and logistics activities. The book also presents material after time or space transfer, will generate additional values, The activities of creating demand and supply of physical objects are the basis of balance and mutual existence, The lack of coordination between the creation of demand and logistics is the cause of major failure in the circulation activities. Although he did not specify the process of logistics activities, but still produced the basis for logistics theory and practice, namely, balance, coordination and interdependence.

In 1935, the American sales association had the earliest definition of the logistics: distribution physical was the material and service that was produced in the activities of the production to the sales ground.

In 1986, the American Association of logistics management will narrow the field of "physical distribution" changed to "logistics", the change exceeded the range of flow of goods, the logistics activities extended to the production field.

In 1998, the American Association of logistics management of logistics of the new definition is: logistics is to effective rate of the goods, services and related information from the source to point of consumption flow and storage, and plan of the whole process, implementation and control process. Its ultimate aim is to in order to meet the needs of the customers. The definition of logistics are more likely and the definition of logistics management, rather than the definition itself connotation of the concept of logistics, nevertheless, this definition still have the desirable and importance, because he emphasizes the logistics activities of objective and controllability.

2 II.

3 Empirical Research a) Data source

Due to non-acquisition of the non-financial indicators, this paper selects the financial index taken as a case study, but the actual enterprise performance evaluation shall fully consider the enterprise nonfinancial indicators. Only so the results of the evaluation will be more close to the real situation of the enterprise.

In order to verify the correctness of the financial index system, 11 financial statements of the 2013 listed logistics enterprises were selected, and the factor analysis of the financial index X1-X11 was carried out.. These 11 enterprises are Wuzhou Communications (1), the Hong Kong Group (2), Tielong logistics (3), Delivery of shares (4), COSCO Shipping (5), Jinzhou Port (6), Lianyungang (7), Tianjin Port (8), Chiwan (9), Yingkou Port (10) and Henderson Daxin (11). According to the table 5-3, P-value is 0.000, which is lower than 0.05, so the

original hypothesis 0 H is rejected. This result indicates that there is a certain correlation between the data. Factor analysis can be carried out.

4 Table 4 : factor contribution rate

According to the principle that cumulative contribution rate should be more than 80%, we can see that the first four public factor of sample variance cumulatively explained to 92.231% from the factor analysis results table 5-4. The first four public factor can reflect more than 90% information volume of the original indexes, indicating that most information of variables has been extracted by first four common factors. Factor analysis result is effective. From the table 5, we can see the relationship of the initial factor load structure is not very clear and the load values of the 4 factors are not very different. It is not easy to explain the factor. In order to achieve the purpose of simplifying the structure, this paper is to rotate the load factor, so the variables have a higher load in some factors and in the rest of the factor only have a small to medium load, which makes the public factor classification and interpretation becomes easier. In this paper, the orthogonal rotation of the factor load matrix is carried out by using the maximum of variance method (i.e. Varimax method), and the factor load matrix of the rotation is as table 6. The rotation is convergent after 5 iterations.

The coefficients in table 6 are loads of rotated factors, which indicates the correlation coefficient between the variables and the factor. The linear relationship between each factor and the original index was fully displayed in table 6. It is clearly seen that rotated factor loads matrix structure is clearer, and the meaning of each common factor is clearer. Specific meaning are as follows:

The first common factor Year 2015 relationship to analysis the weaknesses each enterprise should improve and the advantages continue to maintain.

Comprehensive analysis of treatment results Because we has used the multi data to obtain the financial index correlation factor score: 0.854 F X X X X X X X X X = ? + ? + ? ? ? + +

Debt service factor F4 score column: 0.005 F X X X X X X X X X = + ? + + + + ? + Table 7 :

According to the factor score and the annual index data of the enterprise, the Excel is used to sort the factor scores, as Logistics enterprise From table 5-7 we can see Winbase's comprehensive performance status is the best. All aspects of strength is very strong for the reason that in the ranking of F1, F2 and F4 are located on the first,. Despite the growth factor is at a disadvantage, due to the low proportion of growth factors in comprehensive performance, so it ranked the first position. Therefore, Winbase should focus more on how to improve the development potential of the enterprise in the future.1 F R 2 F R 3 F R 4 F R CS R Winbase 57

Various aspects ability of Shenzhen Chiwan is relatively balanced. The reason is that it has a higher solvency and profitability and the ranking of the enterprise in the four factors is on the comparison and close, so among the second. This shows that it is a comprehensive development oriented enterprises. If it can be more excellent in all aspects of business management, corporate performance can get a further breakthrough.

Lianyungang shows strong earnings and

Empirical Research on the Performance Evaluation of Logistics Enterprises operating ability for the reason that it received high marks in the common factor F1 and F4. Score in the other two common factors belong to medium or lower. But due to earnings factor and operating factor in comprehensive score occupy a high proportion, Lianyungang achieved the third place. It should put Yingkou port and Port group are in a medium level in all aspects, so their rankings are in the position of fourth and fifth..This paper suggests that it should learn essence from enterprise with better performance in the business process in the future, carry forward the strengths and make up for weaknesses.

Tianjin port has good growth potential compared to the other factors. Despite its common factor F3 ranked near the top, the scores of the other three public factors are in the middle position, so its comprehensive ranking is in the sixth. Tianjin port also needs to continue to improve the profitability, debt service and operational capabilities.

Jinzhou port showed strong growth potential rather than other enterprises, and its score in the common factor F3 ranked the first, which showed it had very good potential for development. Secondly scores in F2 and F4 ranked in the middle position, which shows the profit ability and operation ability still need to be improved. While the profitability ranked the bottom second, the problem to be solved is earning problem. The enterprise should focus on business earnings level of business next year.

Eighth to tenth of the logistics companies, ranking in the four factors are relatively lower, so the overall ranking is also lower. So, The delivery of shares, Logistics and COSCO Shipping should find the reasons for the decline of comprehensive ability, and improve them.

Wuzhou traffic's performance is somewhat lacking. It performed relatively worse in terms of profitability, solvency and operating capacity that most of them ranked in the countdown to the first or the second, although it is in the second position on the development potential. Potential accounts for less proportion in comprehensive performance evaluation of development, therefore, comprehensive performance ranking is still in the last one. So simply according to 2013 financial situation, Wuzhou traffic lacks of competitive advantage compared with other logistics enterprises. Compared to other logistics enterprises, regardless of the overall strength or ability of each dimension, it still has far gap, so Wuzhou communications should make efforts in many aspects or find their own areas of strength, to strengthen the breakthrough, and then drive the business forward.

5 III.

6 Summary

The research and analysis above showed that the performance evaluation index system of the logistics enterprise is feasible and available. So we can evaluate the financial performance of logistics enterprises from four perspectives, that is, profitability, debt service ability, growth ability and operation ability. In these four skills, leading role are mainly the profitability dimension and solvency dimensions, for their size determining the survival ability of logistics enterprises, and they are symbols of the lifeline of the logistics enterprises. The contribution to the system in the rate is 49.195%. Growth and operating ability contribution rate are in general in comparison, which only accounted for 1/3 of the overall, but in logistics enterprise financial performance is also one of the most important factors, which operation ability reflected in the overall strength of the enterprise logistics management and growth ability reflects the potential of logistics enterprises and the future value may bring, and it has an important significance on the company's future development. Therefore, in the process of financial evaluation of logistics enterprise performance, it should comprehensively and accurately evaluate four levels of ability, and strive to do the evaluation results comprehensively and effectively to reflect the enterprise management status.

IV. ¹



Figure 1: 4

1

Figure 2: Table 1 :

2

common factor variance

Figure 3: Table 2 :

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