Analysis on the Application of Mathematical Statistics in the Field of Modern Economy and Management

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ABSTRACT: Mathematical statistics is a subject that uses mathematical methods to describe phenomena and summarize laws. It has a wide range of applications in modern economy and management. Based on this, this article first introduces the main content of mathematical statistics and analyzes the importance of mathematical statistics in modern economy and management. Secondly, combined with the practice of economic management, analyze the problems existing in the application of mathematical statistics in the field of modern economy and management. Finally, specific countermeasures to strengthen the application of mathematical statistics in the field of modern economy and management are proposed.

KEYWORDS: Mathematical Statistics; Modern Economy and Management; Statistics; Information Data.

I. INTRODUCTION

Modern economy and management focuses on stage and accuracy. Quantitative methods are one of its main management methods. Mathematical statistics is an indispensable part of modern economy and management. The establishment of mathematical statistical models provides data support for business management and decision makers, and provides new ideas for the optimization of business activities. The application of mathematical statistical methods can significantly improve the efficiency of modern economy and management.

II. THE IMPORTANCE OF THE APPLICATION OF MATHEMATICAL STATISTICS IN THE FIELD OF MODERN ECONOMY AND MANAGEMENT

The application of mathematical statistics in the field of modern economy and management mainly has the following two aspects: On the one hand, it provides data support for the scientific management of enterprises. Mathematical statistics provide technical support for the quantitative management of enterprises. Managers can use mathematical statistics to analyze the current production costs and management costs of enterprises. For example, construction engineering companies can use mathematical statistics to make accurate project budgets and improve the scientific nature of enterprise investment project management. On the other hand, enterprises can use mathematical statistical methods to estimate the impact of changes in market factors and policy factors, judge the profit and loss status of the enterprise, analyze the time point of turning losses into profits, and arrange production activities in a more targeted manner.

III. PROBLEMS IN THE APPLICATION OF MATHEMATICAL STATISTICS IN THE FIELD OF MODERN ECONOMY AND MANAGEMENT

At present, there are mainly two problems in the application of mathematical statistics in the field of modern economics and management:

First, the depth and precision of mathematical statistics are not enough. After more than ten years of rapid development, my country's economic level and technological level have been significantly improved. Industrial Internet and intelligent manufacturing have changed the production and operation methods of enterprises. However, many companies still use the past mathematical statistical methods, and the statistical items, accuracy, digital requirements, and statistical methods, tools, and depth of digging are all relatively backward.

Second, the management system of mathematical statistics is relatively backward. The statistical departments of many enterprises are accountable to the top, mainly to meet the statistical needs of the national audit department and the regulatory department. The auxiliary effect on the enterprise's own management system and decision-

making system is not obvious, resulting in a certain degree of waste of resources.

IV. CONCLUSION

[1] Improve the accuracy of mathematical statistics
a. Use modern mathematical statistics equipment

To improve the efficiency of the application of mathematical statistics in the field of modern economy and management, enterprises must strengthen infrastructure construction and improve the technical level of management personnel. First, screen the existing mathematical statistical analysis software, update and maintain commonly used software, ensure that the software is always in good condition, deal with some bugs in the software, and solve the statistical software and new computer equipment Incompatibility issues. Timely weed out statistical software that frequently failed, and timely replaced it with new software in the market to improve the accuracy of statistical work. Second, enterprises should strengthen the construction of computer infrastructure, increase the rate of data transmission, reduce the bit error rate in the process of mathematical statistics, and improve the accuracy of mathematical statistics through optical fiber networks and LAN bandwidth expansion. Third, in the process of introducing new equipment and new technologies, enterprises should strengthen technical training for statisticians to make them proficient in the process of using new equipment and new technologies.

b. Strengthen the application of big data and cloud computing technology

To improve the efficiency of the application of mathematical statistics in the field of modern economy and management, enterprises should make full use of the development results of the industrial Internet and intelligent manufacturing, and use big data technology and cloud computing technology to optimize the process of mathematical statistics in the field of modern economy and management. On the one hand, enterprise technical personnel should strengthen their learning of big data technology and establish their own database to divide production materials, production costs, fixed assets, liquidity, product pricing, product revenue, supplier information, and corporate production profits. Data information is classified and recorded in a database, and access permissions are set to facilitate decision makers in different production and operation management departments to use the data in the database to make scientific decisions. On the other hand, companies should use cloud computing technology to subcontract part of the mathematical statistics work, take advantage of the talent, equipment and technology advantages of third-party statistics companies, obtain industry development data, and combine the information in their own databases to understand market conditions. Make predictions and make more reasonable production plans.

[2] Improving the management system of mathematics statistics
a. Improve the understanding of the function of mathematical statistics

To improve the application efficiency of mathematical statistics in the field of modern economy and management, enterprises must deepen their understanding of the role of mathematical statistics from decision-making, management to executive levels. First of all, the decision-making level of an enterprise must learn to apply mathematical statistics, conduct quantitative analysis, and use data to judge the laws of the market. Secondly, the management of enterprises should regard mathematical statistics as a modern management tool, and play the role of mathematical statistics in specific management projects such as employee attendance management, performance management, production workshop management, and production material management. Finally, the executive level of the enterprise should improve data awareness and information awareness, reflect their work content and work results in a digital way, and enrich the information sources of mathematical statistics.

b. Improve the management of mathematical statistics process

To improve the efficiency of the application of mathematical statistics in the field of modern economy and management, enterprises should strengthen the process management of mathematical statistics and establish two-way statistical information transmission channels. On the one hand, smooth the bottom-up transmission channel of mathematical statistics, improve the mathematical statistics efficiency of the planning department, and subdivide the specific statistical work of the planning department. On the other hand, smooth the top-down transmission of mathematical statistical results, strengthen the connection with external statistical databases, improve the management awareness and strategic awareness of the grassroots statisticians, and create files for the classification of statistical data. The mathematical statistical analysis is fixed in the decision-making process of the enterprise to improve the scientificity of decision-making.

V. CONCLUSION

In summary, workers in the field of modern economics and management should pay attention to the application of mathematical statistics to improve the effectiveness of economic management. From the analysis of this article, it can be seen that studying the application of mathematical statistics in the field of modern economics and management will help managers to view the current economic and management deficiencies in the application of mathematical statistics from the perspective of the problem, and to conduct targeted management methods. Adjustment. Therefore, the staff should strengthen the study of mathematical statistics theory and explore ways to improve the effectiveness of mathematical statistics application in management practice.

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