Quality evaluation and its influencing factors of statistical data in quantitative research of enterprise management

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Abstract: In the market economy. Statistical data is the main factor to help enterprises to make decisions. As the reference basis for enterprise management decision and operation, statistics realizes the informatization of statistical data and plays an important role in enterprise management innovation and the maximization of economic benefits.

1. Introduction

Modern enterprise management is a systematic project. Statistics is a marketing strategy to maintain the normal operation of enterprises, provide timely and accurate data for the operation of enterprises, and make accurate judgment for the market operation. It provide necessary reference for the development direction, development trend and operation status of the enterprise.

2. Concept of statistical data

Statistics, in its nature, is a kind of cognitive activity, which observes and explores the overall phenomenon of objective things by collecting, sorting out, describing and analyzing data (Liu Ling, 2003). Statistical data through statistical investigation, statistical collation and reflect the overall social and economic phenomenon of digital data, is the result of statistical work[1].

2.1 Characteristics of enterprise statistics

Continuity: statistical work cycle, step by step, with a very strong continuity, throughout each period of enterprise production.

Professional: Enterprise statistics is a branch of professional statistics, which is mainly included in production statistics and benefit statistics, including energy statistics, production statistics, equipment statistics, human resources statistics, price statistics, economic benefit statistics, etc.

Comprehensiveness: The statistical work of enterprises runs through the whole process of enterprise management, and it is inseparable from the purchase of raw materials, production of products, consumption of raw materials, quality inspection and sales of products. The use of equipment, price changes and the implementation of human resources all need statistical work.

2.2 Problems and causes in enterprise statistics

In order to give full play to the function of enterprise statistical analysis, it is necessary to study the ability of high statistical analysis theory. Enterprise statistical analysis is divided into two aspects: enterprise business indicators and market indicators, so as to provide the basis for enterprises to formulate business plans. Through the existing past production and operation situation of the enterprise, the enterprise can predict the possible future production and operation goals and the adaptation situation for the enterprise[2]. However, the informatization degree of the enterprise is not enough to provide a guarantee for the enterprise's operation plan and strategic decision-making.

Due to the needs of enterprise production development, relying on traditional manual statistics is far from meeting the needs of enterprises for information, in order to make the statistical work from heavy manual labor, the use of computers to complete the processing of statistical data, can greatly improve the efficiency and quality of statistical work. After the realization of statistical information,

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the data can be directly collected from the most basic and original places, which can change the working mode of reporting statistical data layer by layer and sorting step by step. Without the intervention of intermediate links, it can effectively improve the authenticity, accuracy and scientificity of statistical data.

3. Analysis of the factors affecting the statistical data quality

Since the purpose of statistical work is to obtain high-quality statistical data that can meet the needs of users, the data quality is controlled, and the statistical department is required to provide accurate, timely and applicable high-quality data, so as to provide data services to the direction of decision-making services. Willishire & Meyen (1997) found that for a data quality, both subjective and objective factors should be taken into account, and the subjective and objective measures are used to reflect the nature of data quality in the organizational environment. The attributes of data quality, the collection, analysis and measurement of attributes, should be used in qualitative measurement and quantitative measurement to determine the confirmation and evaluation of the quality of data. Factors affecting the quality of statistical data are divided into technical factors and non-technical factors, and technical factors refer to the errors caused by the use of statistical investigation methods. Non-technical factors mainly include the regularization of enterprise scale, the importance of the enterprise, enterprise statistical power, statisticians status and knowledge level, enterprise informatization and data and interest correlation, technical factors and non-technical factors define: all related to the production process of statistical data (including statistical design, statistical investigation and data acquisition, statistical data processing) factors called technical factors, in addition to the factors are called non-technical factors. Since the statistical data is related to the interests of the provider, the statistical department will force or authorize the statisticians to modify or fabricate the reality of virtual statistical data by themselves, so the assessed indicators have problems in the quality of statistical data. Therefore, according to the influencing factors of statistical data quality, the selection of variables and the conceptual model, the theoretical model affecting the quality of enterprise statistical data is constructed[3]. Hypotheses are given, and the corresponding explanatory variables, explanatory variables and control variables are set for the quality of statistical data respectively, and questionnaire design, data collection, variable measurement and index quantification are used to effectively analyze the statistical work of enterprises in Jiangsu Province, China. Different types of enterprises were selected for the interview survey. Variables that affect the quality of enterprise statistical data: the basic situation of the enterprise, the work of the enterprise, the view of enterprise data and the satisfaction of the survey, the sampling method and simple random sampling method, using Spss11.5 statistical software to analyze the survey data, using statistical method, factor analysis, reliability test, used for combining reliability test, multiple linear regression, for key factors. Factors affecting the quality of the statistical data were analyzed.

Because domestic and foreign scholars have different focuses on the influencing factors, this paper avoids the technical factors in the data production process according to the actual situation of China (all technical factors studied abroad). Theoretically, the research factors are mainly derived from the influence of non-technical factors studied by domestic scholars on the statistical data of enterprises. Interpretation variable is the quality of the enterprise statistical data of user demand satisfaction, data quality evaluation standard is a multidimensional standard, and the national statistical institutions and international statistical organization interpretation of statistical data quality has no unified standard, and these different data quality standard system contains the popular data quality standard system, namely the three basic dimensions: accuracy, timeliness and applicability.

4. Collection and analysis of sample data

A large number of literature research, although the domestic empirical research on the quality of enterprise statistical data influence factors almost no, but there are still some relevant literature on the questionnaire design, especially the measurement of variables inspired so this study on the basis of absorbing the related literature research, on the basis of the preliminary interview design research

questionnaire to measure the influence of enterprise statistical data quality.

5. Suggestions on improving the quality of enterprise statistical data

The significance of enterprise statistics is to help enterprises to improve the level of enterprise management and make effective decisions. Enterprise statistical ability is the basic characteristics and conditions that an enterprise statistical system must regularly provide the accuracy, timeliness and applicability of statistical data[4]. The goal of an enterprise is to make profits, and the key to achieve the goal is management ability and decision-making ability. Because the core of statistical ability is the quality of statistical data, the statistical ability of enterprises should pay more attention to the quality of statistical data, and pay more attention to the statistical analysis ability and the statistical ability to participate in enterprise management and decision-making.

Enterprise statistical data systematic: enterprise statistical system construction need to experience system planning, design, analysis, implementation, operation maintenance, statistical information system construction, such as several aspects, enterprise statistical process systematic, established to solve the problems of business computer system and application system, it is mainly data collection, storage and online access. Modern enterprise information system is an integrated system based on the microeconomic database as the center and based on accounting and business accounting. It fundamentally solves the accounting information system established by the enterprise financial department and the marketing management information system established by the sales department to help enterprises realize business intelligence. Enterprise statistics plays the role of supervision and service in the management system and production and operation, so it is necessary for the enterprise information construction to upgrade the existing statistical system and establish an efficient statistical information system to improve the efficiency of enterprise statistics.

5.1 Degree of regularization of the enterprise organization

The regularization of enterprise statistical work is the premise and basis of the quality of statistical work, and making scientific and feasible plan is an important link of enterprise organizational management. Enterprise statistics organization regularization construction workload is large, involves a wide range, strict requirements, is strict and meticulous work. In the implementation of organizational regularization, the standardization standard should be unified with the "Statistical Law" and the whole statistical work should be applied to the rules and management systems, the operation and management objectives should be both scientific and feasible, can not be divorced from reality, and should start from the actual statistical work of the enterprise. Formulate specific and clear, executable goals, such as: the enterprise statistical report system, original records, statistical ledger and the transmission of the report system is scientific, reasonable, systematic, sound, can be quantitatively expressed, so as to facilitate the implementation of the standard and inspection and acceptance. Standardized construction is the necessary way and measures to strengthen the organization and management, so strengthening the construction of enterprise statistics and improving the level of enterprise statistics can improve the management ability of enterprises.

5.2 The importance of enterprise statistics

Enterprise units and departments at all levels should do a good job in the implementation of the plan on the basis of valuing and implementing clear goals. As an enterprise, we should first establish and improve the rules and regulations, set up the person in charge of comprehensive statistics, decompose the task from top to bottom to the enterprise workshop (departments), teams and individuals, to form an enterprise statistical standardization construction target system. The importance of enterprises is also the prerequisite for improving the management level of the whole enterprise and the implementation of the target.

5.3 Conditions and capacity construction of enterprises

The core of statistical ability is the quality of statistical data. While the statistical ability of enterprises attaches great importance to the quality of statistical data, it also pays more attention to the

statistical analysis ability and the ability to participate in enterprise management and decision-making. The issue of statistical capacity building originated from an international conference held by the Development Assistance Committee of the Organization for Economic Cooperation and Development, the World Bank and the International Monetary Fund, which established the Statistical Partnership for Development in the 21st Century (PARIS21). PARIS21 The purpose is to promote the statistical capacity building of developing countries. In July 2009, the Chinese government and the United Nations in Beijing signed "the United Nations statistical ability development trust fund agreement" its purpose is to improve the statistical ability of China and Asia developing countries, "enterprise data collection" as one of the focus of the project, the quality of enterprise data collection is high and low than the enterprise statistical ability close relationship. The ability of enterprises to obtain high-quality data can be measured by the quality of enterprise statistical data, including: accuracy, timeliness, applicability and other dimensions, enterprise statistical ability = the ability to obtain high-quality data + the ability of enterprise statistical analysis + the ability of enterprise statistics to participate in management decision-making.

6. Conclusion

This paper first expounds the importance of statistical data to the enterprise, from the background of the research problem, and scholars at home and abroad to review the factors of statistical data quality, summarizes the enterprise statistical data quality non-technical factors, through factor analysis, reliability test, multiple linear regression method to verify the problem of research. In terms of the selection of variables, six variables are analyzed: the importance of the enterprise, the status of statisticians, the degree of organization regularization, the knowledge level of statistical personnel and the degree of informatization of enterprises. Taking enterprise importance, statistician's position, organization normalization, statistician's knowledge level, enterprise's statistical ability and enterprise's informatization level as independent variables, and analyzing enterprise's statistical data's accuracy, timeliness and applicability as variables, it is concluded that enterprise importance, statistician's position, organization normalization, statistician's knowledge level, enterprise's statistical ability are positively related to the accuracy, timeliness and applicability of enterprise's statistical information, which can improve enterprise's satisfaction with statistical data.In enterprises, with the rapid economic development and increasingly fierce market competition, the data of enterprises are also more important. Its practical significance lies in introducing data quality management into enterprises in China, improving the importance of data in enterprises in China, and clarifying the main factors affecting data quality under the current situation of enterprises in China, so that enterprises can improve and improve the data quality in a targeted manner, and finally achieve the purpose of improving data quality.

References

[1] Granquist. L. An over view of methods of evaluating data editing Procedures [J]. Statistieal Data Editing, vol 2, no.48,pp.112-122, 1997.

[2] Lee. Y. W. & Strong. D. M. K n owing -why about data proeesses and data quality[J]. Joumal of Management Information Systems, vol 20, no.3,pp.13-39, 2003.

[3] P ipino. L. L. Lee. W. & Wg. R. Y. Data quality assessmeni[J]. Communieations of the AC M , vol 45, no. 4, pp.211-218, 2002.

[4] Liu Ling. Strengthen statistical data management and improve the quality of statistical data [J]. Suzhou Teachers' College, vol 18, no.2,pp.67-68, 2003.