Research on the Challenges and Innovations Faced in Social Statistics Work in the Digital Era

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Abstract: The continuous development of information technology has led to digital transformation and transformation in society. The effective utilization of digital technology by enterprises and other entities is conducive to promoting their establishment of innovative development concepts, optimizing resource allocation, promoting changes in the internal structure of digital entities, promoting intelligent management models, and then improving management efficiency, ultimately driving changes in the overall industrial structure and resource allocation of society. Especially in the face of the increasing amount of information technology data, big data and digital technology have become important forces driving social and economic transformation, bringing huge challenges and opportunities to social statistical work. In this social context, statistical work has undergone changes in data sources, technological environment, decision-making needs, and other aspects. Based on a specific analysis of the challenges and changes brought by digitization to social statistical work, this paper explores the innovative development of social statistical work in the digital era.

1. Introduction

The rapid development of information technology has driven digital transformation in various fields of society. Social statistical work has emerged and developed with the development of human society and the needs of national management, with a history of nearly four to five thousand years. It is a social survey and research activity that uses scientific methods to collect, organize, and analyze statistical data under the guidance of statistical theory. The statistical objects include the overall social, economic, and natural phenomena. A complete social statistics work generally includes statistical design (referring to the development of statistical work plans based on the nature of the research problem and under the guidance of relevant scientific theories; the plan content includes the development of statistical indicators, statistical classification standards, statistical work development plans, and estimated work progress, etc.), statistical survey (referring to the practical investigation of research objects and problems using specific survey methods and the collection of survey data), statistical organization (referring to the classification and organization of collected information using statistical charts, tables, and other means) and statistical analysis (referring to the four steps of further analyzing and processing the results of data organization to obtain comprehensive indicators that reflect the overall quantitative characteristics, and then summarizing and analyzing useful information). Social statistical work, as an important tool for providing

information on various aspects of society, plays an important role in the development of the national economy and the process of modernization construction. Therefore, it is inevitable to reform and innovate social statistical work in the digital context. The digitization of social statistical work can better leverage its information efficiency in social development, providing a more accurate and practical data and information foundation for social and natural development.

2. The Challenges of Social Statistics in the Digital Era

2.1. Changes in Data Sources

Under the traditional mode of social statistical work, statistical data is mainly collected by statistical personnel for the purpose of collecting information and using self-made statistical questionnaires as survey methods. Its data collection objects and scope are very limited. With economic development and social progress, the volume of information data in human society has become larger and more complex, increasing the difficulty of data collection. But the development of information technology has also increased the intelligence of data collection work; All network devices and platforms can become the supply side of statistical data sources; The scope of collection has also expanded from the range that staff can reach to the full range of network device services. The data content is more abundant; in addition to the targeted information required for statistical research problems, staff can also collect other types of information. The digital characteristics of statistical information resources in terms of quantity, structure, carrier, and other aspects have given new connotations to digital information management, posing challenges to traditional information collection methods. [1]

2.2. Changes in the Technological Environment

Before the large-scale application of modern information technology methods, social statistical work was basically carried out by statistical personnel using traditional work models for information collection, simple data analysis and processing through methods such as statistical depiction and charts, and then forming written data of statistical results. There are few statistical departments that use computer network technology for data collection, analysis, and processing. The technical environment for statistical work is relatively simple and easy to operate. In the digital era, big data, network technology, cloud computing, and modern communication technology are widely used in statistical data collection, transmission, exchange, and sharing. Technologies such as databases, data mining, dynamic monitoring and prediction systems, as well as methods such as multivariate analysis, multifactor analysis, and correlation analysis, demonstrate the intelligence of modern technology in data analysis and processing. The changes in the technological environment of social statistical work are driving the informationization development of statistical work in various fields.

2.3. Changes in Decision-Making Needs

The collection, analysis, and processing of information data in social statistics work have always provided data support for the country, enterprises, and learning entities in strategic deployment and decision-making. With the rapid development of the national economy and social changes, people's social needs are constantly changing, and managers at all levels also have a more accurate, efficient, and comprehensive demand for statistical information data. Therefore, establishing a data-driven social statistics service system and completing statistical work through network information technology means is a new goal of social statistics work in the digital era, allowing it to adapt to the

development needs of the times, reflect practical problems, and better assist managers in making decisions.

3. Innovation in Social Statistics Work in the Digital Era

3.1. To Improve the Construction of Digital Infrastructure

Infrastructure construction can provide good technical support for data collection and processing in social statistical work. Firstly, network environment construction should be carried out. The use of many information technology methods and devices cannot be separated from high-quality networks. [2] Therefore, statistical departments need to build a safe, high-speed, and green network environment. For example, the emergence of 5G networks has provided technical support for the construction of the network environment in social statistical work. Secondly, we should improve the infrastructure construction of digital platforms and technologies such as big data platforms, artificial intelligence, cloud computing, etc. It aims to provide sufficient technical support for data collection and processing of social statistics, and ensure the accuracy of data collection and efficiency of statistical work. Finally, it is necessary to improve hardware facilities such as computer equipment, so that various intelligent means of social statistical work can be effectively used.

3.2. To Strengthen the Research and Development of Digital Technology

The technical level of data collection and processing is the decisive factor for the progressiveness of social statistical work. Strengthening the research and development of digital technology is crucial for the innovation and development of social statistics work. In economic and social development, various statistical entities should attach importance to the research and development of digital technology in social statistical work, and continuously strengthen core technology research, innovate data collection and processing technologies based on the specific situation of the statistical work area and the development status of enterprises. [3] They should strive to occupy technological advantages, reap good economic and social results, and fully play the guiding role of summarizing laws and exploring development in social statistical work, to achieve the goal of providing more scientific and powerful support for the development of society and enterprises.

3.3. To Establish and Improve a Statistical Supervision System

Firstly, the importance of statistical supervision should be strengthened. Statistical departments at all levels should fully recognize the importance of data accuracy in social statistical work, understand the risks of privacy leakage in various aspects of statistical work, and establish awareness of statistical supervision and management. Secondly, it is necessary to improve the system related to social statistics. The government should establish and improve relevant laws and regulations, clarify rules and regulations, and provide legal protection and standards for statistical departments at all levels to carry out their work. Various fields and statistical departments at all levels should formulate statistical work norms based on the problems studied and the actual situation. They should also stipulate the scope, standards, and processes of data collection, ensure the accuracy and practicality of the collected data information, and improve the efficiency of social statistical work. Once again, a specialized statistical data supervision organization should be established. The statistical department can establish a specialized regulatory organization to clarify the supervisory responsibilities of its members, monitor the entire process of social statistical work, verify basic data during data collection, and strictly monitor data processing and the correctness and

completeness of data reports during data analysis and processing. It can ensure the safety of data during the statistical process.

3.4. To Build a High-Level Talent Team

Both data collection and data processing cannot be separated from professional staff. Therefore, building a high-level statistical talent team that adapts to the development of information technology is very important in the development of social statistical work. The construction of a high-level statistical talent team can be started from the following aspects. One is to improve the information literacy of statistical workers. The staff of the statistical department have rich experience in statistical work and have received business training, possessing basic skills in statistical business. However, due to a lack of information technology literacy, it is difficult to meet the statistical work needs of the digital era. Therefore, based on the analysis of the needs and standards of the statistical talent team, the statistical department should develop targeted training plans based on the statistical workflow and the abilities of statistical workers. On the basis of the existing statistical business training, information technology training should be added to help statistical workers enrich their information knowledge reserves, improve their information technology application capabilities, and make them become composite high-quality statistical talents, possessing both basic statistical skills and practical skills in information technology.The second is to cultivate professional statistical talents. The statistical department can collaborate with universities and governments to establish a long-term mechanism for cultivating statistical talents, improve the quality and quantity of statistical professionals, stabilize the output of statistical talents, and increase talent reserves for the selection and use of statistical talent teams. The third is to establish a talent incentive mechanism. In the recruitment and appointment of statistical talents, statistical departments can provide more comprehensive basic guarantee conditions for talents, increase their attractiveness to talents, and reduce the risk of talent loss. While, they should implement incentive measures such as material rewards, job promotions, and spiritual encouragement for statistical workers to stimulate their work enthusiasm and initiative, create a positive competitive environment, and promote the overall quality improvement of statistical workers. The fourth is to leverage the regulatory role of statistical departments and the market in talent management, allowing for a healthy flow of statistical talents and promoting the optimization of statistical talent resource allocation. [4]

3.5. To Improve Statistical Data Management Mode

Firstly, the criteria for distinguishing statistical data should be clearly defined. Each statistical department should establish unified differentiation standards for the same type of data information, strengthen the standardization of statistical basic data, avoid usage errors caused by different standard divisions, and facilitate the sharing of statistical information. Therefore, the statistical department needs to unify the basic statistical work content, including the meaning of statistical indicators, statistical data processing formulas, statistical data collection methods, and so on. Secondly, a statistical data management model should be established. Statistical departments can establish data management models based on big data technology databases, process and analyze the data collected from social statistical work, and then incorporate it into a unified data management model. It can facilitate workers to directly use management models to carry out data management work, improve the efficiency of statistical data management, and reduce the risk of data confusion.

4. Conclusion

The most important function of social statistical work is to use its information output to provide reference for decision-making. Although various information technology methods can greatly improve the implementation efficiency and accuracy of statistical work in the digital era, statistical work cannot be separated from social reality, otherwise it will lose its functionality. Therefore, statistical workers still need to conduct sufficient observation and practice in their work, and then combine information technology methods to more truly and accurately grasp the actual situation of the research topic, obtain results that have practical value and reflect social laws, and provide data support for decision-making and implementation. Therefore, in the face of various challenges in social statistics work under the digital background, statistical departments and staff should establish a sense of communication and collaboration. Then, they should actively communicate and exchange with workers in various fields, and always innovate statistical concepts and methods based on practical problems. It can better meet the challenges and promote the innovative development of social statistics work.

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