Research Article

Challenges and Innovative Countermeasures Faced by Public Administration in the Context of Big Data and Internet of Things

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With the advent of nonrelational databases, data science has gradually become the focus of attention in academia and engineering. The data generated by human social networking is also gradually increasing, and big data technology appears in this context. Its main purpose is to obtain key information from complex data sets and realize the role of comprehensive analysis. In recent years, the concept of the Internet of Everything has gradually entered all walks of life. Similar to the design of smart cities, smart communities, and smart buildings, IoT technology has also been adopted. The development of the market economy and the deepening of the reform of the economic system require that the government's public services must also be transformed as soon as possible. The responsibilities undertaken by the government are becoming more and more complex and important. The traditional government public management methods cannot meet the needs of all levels of society. The development of big data and the Internet of Things provides new opportunities for the government to innovate management methods, which is also one of the cores of future government work. The government needs to gradually transform the government's public management method based on big data and the Internet of Things platform, relying on information technology, so as to improve people's satisfaction and happiness index. Based on the problems existing in traditional public management, this paper focuses on the analysis of local government management methods and takes Shenyang City as the case analysis object to innovate local government public management methods and at the same time provides some reference for other regions to innovate public management methods.

1. Introduction

1.1. Context and Meaning. The reform of China's public management system is lagging behind the reform of the economic system, which is also the result of the research and recognition of domestic experts and scholars. With the continuous development of big data and the Internet of Things economy, people have doubts about the management methods of individual local governments [1, 2]. How to deepen the reform of the administrative system has become an urgent problem to be solved. Premier Li Keqiang clearly stated at the meeting that China needs to implement the spirit of the Third and Fourth Plenary Sessions of the 18th Central Committee, gradually transform government functions, adhere to the "three-pronged approach" of streamlining administration, delegating powers, combining delegating power and optimizing services, and continue to transform government functions [3, 4]. Push it further and share the results of the reform with the people. Therefore, in the context of adhering to the government as the leading role, it is necessary to deeply analyze the relationship between the government and various strata [5, 6]. In the process of deepening the reform of the administrative system, our country has put forward the goal of building a service-oriented government and a government based on the rule of law, with enthusiasm, in order to improve the satisfaction of the masses, thereby improving the happiness index of the masses.

Under the background of the economic new normal, the economy of China is moving towards a clearer division of labor and supply-side reform, and the economic growth model is changing from a speed-based to a quality-based one [7, 8]. As the forerunners and experimental fields of reform and innovation, local governments should be the leaders of

comprehensively deepening reforms and the leaders of the country's innovative public management methods. Starting from the rationale of government relations, this study focuses on analyzing the path of local governments innovating management methods. Most of the problems of public management reform in the early research areas are limited to land planning, investment promotion, and other issues, and there are few analyses on management methods [9, 10]. By drawing on the development experience at home and abroad, comparing the measures and opinions of domestic and foreign experts and scholars to innovate local government management methods, and taking Shenyang as the case analysis object, this paper deeply analyzes the significance of the reform of innovative public management methods, so as to enrich the relevant research status and have certain theoretical significance.

1.2. Big Data and IoT. Big data is a product of the times. It is a new information technology use which follows the Internet technology since the twenty century, the Internet of Things technology, and cloud computing technology after the 21st century. Big data, in short, is a collection of massive amounts of data. The most fundamental thing that makes people's big data is that the collection method of data information has undergone tremendous changes, and it has a close connection with the development of the Internet that allows people to share a large amount of information in cyberspace [11, 12]. Big data can be said to be a whole data set, rather than a single, random sample. Its analysis objects will be wider, more, and more comprehensive than before, so our analysis of a certain sample can cover the whole and analyze the sample in all directions and at multiple levels, which effectively improves the accuracy of data analysis. Its data volume will be larger, although the accuracy may be reduced, but a sufficient amount of data can effectively dilute or eliminate those inaccurate parts, and the hybridity will become the advantage of big data, with (0, 1) as a scope; the use trend of big data in the direction of government public management is shown in Figure 1.

As can be seen from Figure 1, the application of big data in local government offices has become more and more common in recent years.

Big data, in general, is a fairly large dataset. Everything has two sides, and so does big data. However, the changes behind the word big data, including the accumulation of data volume, the development of analysis and processing methods, the transformation of people's thinking methods, etc., are the real value it implies. Now big data has become more and more important; the development and application prospects of big data will get better and better, such as finance, artificial intelligence, medical care, and other frontiers that do not need big data to help the development, so the development and application of big data will be the future trend; we look forward to seeing big data play more roles in the future. Human society can be divided into many ways according to different elements [13, 14]. According to the division of technology and society, it can be roughly divided into fishing and hunting society era (primitive era),
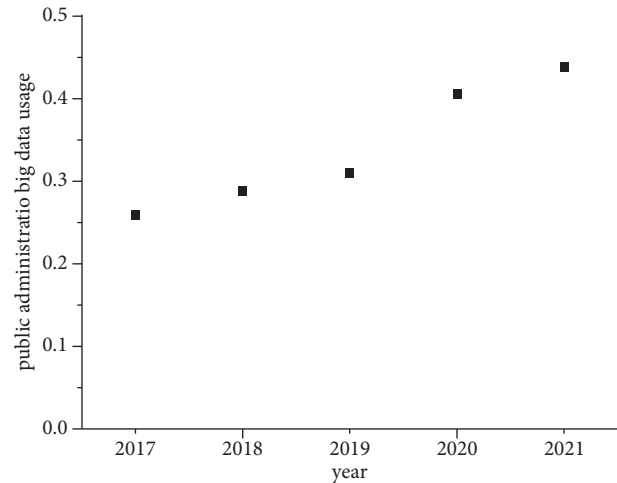

FIGURE 1: Trends in the use of big data in the direction of government public management.

agricultural society era, industrial society era, and information society era. With the rise of Internet technology, big data is the product of the in-depth development of the Internet to a certain stage, and with the continuous deepening of networking and digitization of social resources, big data can carry more and deeper values, and its application scope and prospects are also expanding [15–18]. Therefore, in the future era, big data can not only be used as value and one of the important means of production, but also create value in itself. In many aspects of human production and operation, the habit of relying on big data to analyze and process things big and small in life is heralding the quiet arrival of the era of big data. The arrival of the era of big data is unavoidable. It comes onstage with the continuous improvement of the technical level and gradually plays an important role. It plays a pivotal role in the changes of people's lives and even plays a particularly important role in people's thinking influence.

With the rapid development of electronic components and data science and technology, IoT technology has gradually entered the lives of citizens [19, 20]. The concept of the Internet of Everything is no longer empty talk, and smart homes have become a must-have smart device for most homes. The Internet of Things is mainly based on devices such as sensors and electronic tags and uses the communication protocol arranged by the International Telecommunication Union to connect different types of objects to achieve intelligent identification, positioning, tracking, monitoring, and management, an item interconnection scheme.

1.3. Research Method. First, the literature analysis method: Regarding the management methods of local governments, domestic and foreign experts and scholars have conducted a lot of analysis and research on this. We collected relevant materials through CNKI, Wanfang, newspapers and magazines, libraries, and other channels, screened out invalid information, and sorted them out. On the basis of the

research results of economists, extract their own arguments and arguments.

Second, the comparative research method: In the writing of this article, the comparative analysis method is used to make a vertical and horizontal comparison of the management methods of local governments. Through the comparison of the effects of typical measures before and after the implementation, the scientific nature of these measures is clearly reflected, and the experience of foreign development is used for reference to lay the foundation for the writing of this article.

Third, the questionnaire survey method: in order to obtain the current public management status, conduct a questionnaire survey on the local government public management, grasp the real data of some public officials in the use of big data, and find the key points to improve their ability in this field.

2. Current Situation and Influence of Local Government Management

2.1. Current Situation of Local Government Management. In order to meet the development needs of the times, the local government pays special attention to the innovation of public management, follows the policy planning, and establishes the government affairs concept of innovation, harmony, greenness, and development, and the local government continues to innovate the management method. A questionnaire survey was conducted on 33 staff related to public management of Shenyang Municipal Government, and it was found that the focus of Shenyang Municipal Government's construction of public management was to improve technology and ensure the guidance of informatization [15, 16]. In the process of economic construction and improvement of people's livelihood, at present, Shenyang's WeChat public account and the "In Shenyang" APP have been launched. Based on the information platform, the public can make complaints, consult policies, inquire about relevant information, etc. The direction and government status involved in the questionnaire are shown in Table 1.

From Table 1, we can see several main aspects of the application of big data in government public services at this stage. Through reliability and validity analysis, it is found that the reliability and validity of this questionnaire meet the set values in the theory, which proves that the reliability and validity of this questionnaire are normal. The specific values are shown in Table 2.

Through the reliability comparison in Table 2, it can be seen that the data of this survey can be used for further research. After years of development, Shenyang Municipal Government has made some progress in strengthening government management, social supervision, and public services. Under the background of improving management methods, local governments have made every effort to build a service-oriented government and an innovative government. The government affairs management system has the real time and timeliness of government affairs information sharing, which also provides a fast and convenient channel for local governments to exercise state power [21–24].

Table 1: Status quo of government big data public management deployment.

Questionnaire field	Management situation
Public safety	Video analysis center
Urban governance	Multicompliance platform
Approval services	Special approval APP

Table 2: Reliability and validity analysis.

	Reliability	Validity
Value	Alpha = 0.82	KMO = 0.75

Therefore, the huge government system also brings new challenges to the government's public management.

All in all, under the background of "big data and Internet of Things+," the government's public management faces both opportunities and challenges. If the government wants to use big data and Internet of Things technology to do a good job in management, it needs to seize the opportunities and meet new challenges.

In the era of big data and the Internet of Things, residents have more convenient means of obtaining information, their desire to participate in public management continues to increase, and the public's supervision of government law enforcement activities has increased. General Secretary Xi Jinping once clearly pointed out that "netizens are ordinary people, and public opinions are all online [25–28]. Wherever the people are, our cadres will go, and we will adhere to the mass line." In the face of changes in the social environment, "big data and the Internet of Things" have a dual impact on the local government's public management.

2.2. Influence of Local Government Management. First, make government decision-making more democratic and scientific. Before making a decision, the local government must conduct in-depth research and analysis on the content of the decision, conduct public opinion surveys in the form of symposiums, hearings, etc., collect relevant opinions from the public, and pay special attention to the relevant opinions of the relevant stakeholders. Before making a decision, the standard of dissatisfaction of the people is taken as the standard. As a new situation in China's democratic political construction, the local government's social publicity system is an important decision for the government to win the trust of the people [29–31]. The local government portal in public administration can become the carrier of publicity and hearing. If the content of the local government's publicity is divorced from the people's life, then its decision-making must not conform to the opinions of the public. This also shows from the side that the government needs to make relevant preparations before conducting hearings and public announcements. Therefore, the development of big data and Internet of Things technology facilitates the government to openly collect information, expand the scope of the audience, and ensure the public's right to know. The Bureau of Statistics shows that the credibility of the government's
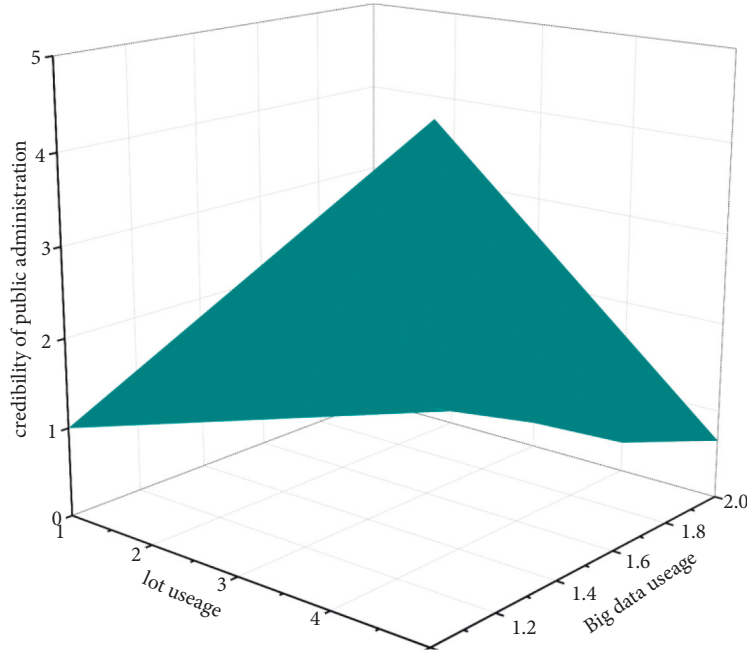
FIGURE 2: The credibility of government public management under the influence of big data and Internet of Things technology.

public management has been greatly improved after the role of big data and the Internet of Things technology as shown in Figure 2.

From the three-dimensional model in Figure 2, we can see that the scientific combination of big data and Internet of Things technology can greatly improve the credibility of government work.

Second, it facilitates the openness and transparency of law enforcement administration. The information disclosure system is to ensure the public's right to know and to supervise, and the government needs to disclose relevant information through various channels on a regular and irregular basis. For example, in 2008, Wen Hongxiang requested the Shenyang government to disclose 21 financial accounts based on relevant documents, including wages and benefits, entertainment, transportation, etc. This was also the first time that the government was required to disclose relevant financial information. Some areas of Shenyang Municipal Government do not publish public information, and they are not aware of the impact of information transparency on public management [26]. Therefore, local governments use big data and the Internet of Things to publish relevant information, which can improve the people's right to know and urge the scientific and standardized law enforcement behavior. Scientific decision-making behavior facilitates the openness and transparency of law enforcement administration. The specific situation is shown in Table 3.

As can be seen from Table 3, the degree of information disclosure is divided into the interval of (0, 1). Through the analysis of the statistical data of professional institutions, it is found that the disclosure degree of public management information in our country is increasing every year.

Third, it is conducive to enhancing administrative interaction. The masses can obtain information in a

TABLE 3: The trend of public management information disclosure in China.

Year	Degree of information disclosure
2019	0.27
2020	0.38
2021	0.42

timely manner through big data and the Internet of Things and can share individual insights on Weibo, forums, etc., without being constrained by time and space. The construction of public management provides a bridge between the masses and the government to ensure the masses' right to know. For example, the Shenyang Municipal Affairs website not only publishes relevant information such as annual reports and financial budgets, but also publicizes traffic issues, education issues, and environmental issues that the public are concerned about [29]. The Shenyang Municipal Government has broken through the limitations of the traditional interactive platform space with the help of the public management platform, to realize the two-way interaction between the masses and the Shenyang Municipal Government. The platform for netizens to ask about politics provides a carrier for the public to participate in politics. The public can express their personal opinions from an overall perspective. The Shenyang Municipal Government has explained and explained the New Deal on issues of public concern, guided the social trend of thought, and resolved the public's misunderstanding of the New Deal. Promote the establishment of mutual trust between the Shenyang government and the masses. The influence formula of big data technology on government public management is shown in 1(a) and 1(b).

$$p' = \frac{p(1-q)}{(1-q) + p(1-q)} = p\frac{1-q}{1-pq} < p, \qquad (1a)$$

$$H(D) = -\sum_{k=1}^{K} \frac{|C_k|}{|D|} \log \frac{|C_k|}{|D|}. \qquad (1b)$$

3. Challenges Faced by Local Government Public Management in the Context of Big Data and the Internet of Things

3.1. The Transparency of Government Information Needs to Be Strengthened. The original intention of information disclosure is to facilitate the public to understand the current state of government public management, and the public has the right to know the current state of government administration. Under the traditional form, the government ignores the information disclosure link and the public's right to participate. Even in the era of big data and the Internet of Things, individual administrative units still have concealed and false reports, adopting an evasive attitude towards events that are inquired and questioned by the public, and even some administrative units have adopted an evasive and nonpublic attitude towards sensitive data and sensitive events. This practice has resulted in the failure to implement the people's right to know and affected the authority of the government.

3.2. The Degree of Public Participation Needs to Be Improved. Although our country is in the era of big data and the Internet of Things, the public management system of the Chinese government has been in a closed state for a long time, lacking effective external supervision, and the participation of the masses is insufficient. In the process of public management, some local governments seldom ask the opinions of the masses and even ignore the opinions of the people, leading the masses to think that although individuals participate in social governance, they still have no practical role, which directly affects the participation of the masses, and the masses can only be passive. Accept the results of public administration. Under the background of "big data and the Internet of Things," although the channels for the masses to participate in politics have been broadened to a certain extent, the masses do not understand or understand the current situation of some government affairs, and there are certain difficulties for the public to truly participate in public management.

3.3. The Level of Public Management Needs to Be Improved. Compared with foreign developed countries, our country's big data and Internet of Things technology started relatively late, and public management is still in its infancy. Taking the official website of Shenyang City as an example, the relevant official data of the Shenyang Municipal Government is relatively simple, lacks comparison, and cannot meet the basic needs of the public for public management flow in form.

3.4. The Defense Capability of Electronic Information Needs to Be Improved. Information security has always been the core issue faced by the big data and IoT industries. The most common one is the personal privacy issue of users. This type of information issue is worth pondering. At the same time, Western hedonism and decadent concepts have also been introduced into our country along with big data and the Internet of Things, directly challenging the cultural form of our country. Threat comes. At this stage, the construction of laws and regulations on big data and the Internet of Things in our country is lagging behind, and there is no legal punishment for tampering with information and reselling user information. Some criminals take advantage of legal loopholes to maliciously slander government administrative actions [32–34]. Therefore, it is worth pondering how to improve the information public management ability of local governments. In order to investigate the defense capability of electronic information in government public information management, this paper surveys 120 managers from multiple local governments. The results of the questionnaire are shown in Table 4.

Judging from the data reflected in Table 4, there are general deficiencies in the ability of local government staff in our country to process big data. Through reliability and validity analysis, it is found that the reliability and validity of this questionnaire meet the set values in the theory, which proves that the reliability and validity of this questionnaire are normal. The specific values are shown in Table 5.

Through the reliability comparison in Table 2, it can be seen that the data of this survey can be used for further research.

4. Problems Existing in Local Government's Innovative Public Management under the Background of Big Data and Internet of Things

4.1. Lack of Innovation in Management. If local governments want to establish a complete public management information system based on the background of big data and the Internet of Things, they also need to be leaders, unified opinions, and unified planning. If the opinions of the various administrative units under the local government are not unified, and all conduct business according to individual opinions, then the public management system will lack the meaning of implementation. Some local government leaders lack innovation awareness, lack understanding of new technologies and new trends, and do not have big data and Internet of Things thinking, management and government affairs cannot keep pace with the times, and leaders lack data thinking and have not yet realized the value of data [35]. The role of data is ignored in the management process, and there is a lack of awareness of collecting and analyzing data. Some local governments only regard data as a resource but have not effectively applied data to the process of public management and have not yet explored the needs of the people behind the data. This directly leads to the lack of data support for local governments in the process of changing

TABLE 4: Government electronic information defense capacity.

Defense capacity	Interviewee's opinion
Data theft prevention	Weak
Scalping data	Normal
DDOS attack	Weak

TABLE 5: Reliability and validity analysis.

	Reliability	Validity
Value	Alpha = 0.82	KMO = 0.73

their functions and the inability to effectively grasp the public sentiment and public opinion. The final administrative results of the local government are out of touch with the needs of the masses, and the efficiency of public management is relatively low.

4.2. Public Service Capacity Needs to Be Improved. The need to improve the public service capabilities of local governments is analyzed from the following two aspects: First, although some local governments have launched public management systems, the design ideas, operating procedures, and service modules of the public management system are all formulated according to the needs of the government [36]. The core of the local government design is the information that the local government wants to convey to individual industrial and commercial households and corporate legal persons. Some people lack understanding of this and ignore the demands of the people. This also directly leads to the phenomenon that the utilization rate of the local government's public management system is not high and the participation of the masses is low, and the purpose of helping the masses to solve their problems has not yet been achieved.

Second, in the actual management process of the local government, due to the vague positioning of the responsibilities of the local government, the subordinate units have the phenomenon of shirking each other, resulting in the failure of the provincial and municipal preferential policies to be implemented. The thinking of wanting is deeply ingrained, and it is impossible to make the preferential policies small and meticulous. Therefore, the public management system built by the local government cannot effectively play its role, and the public service capacity of the local government needs to be further improved.

4.3. Information Resource Sharing and Business Collaboration Are Slow to Advance. The construction of public management needs to be based on the improvement of the organizational structure and business process of local government departments. Based on the era of big data, the most basic requirement for local governments to build public management is the openness and sharing of data, so as to ensure that relevant government departments can grasp relevant data in real time [37]. At this stage, our country is implementing vertical hierarchical management and horizontal division of labor. Public management structure also leads to separate governance among local governments, and each administrative department has its own data collection standards and channels, especially when local governments build public management platforms, the information and data among various departments are inconsistent, and the data format is not standardized. As a result, information cannot be shared among local government departments, thus forming "information islands." Taking Shenyang City as an example, Shenyang City's design public management is based on the relevant responsibilities of the institution to complete the physical objects. There are few cases of cross-regional and cross-institutional cooperation. Collaborative promotion is relatively slow, and the Shenyang Municipal Government lacks a platform to achieve joint cooperation and cross-institutional cooperation among various institutions. The current degree of the public management efficiency of the Shenyang Municipal Government is affected by the information island as shown in Figure 3.

As can be seen from Figure 3, the current public management in Shenyang is lagging behind in information communication and sharing.

4.4. Civil Servants' Ability to Apply Public Management Is Low. E-government can improve government work process in government affairs activities, facilitate more democratic and scientific decision-making, and strengthen the openness and transparency of law enforcement administration, thereby increasing the participation of the masses. However, public management needs to rely on big data and the Internet of Things platform and use information technology to establish a good government work model. Although the public management platform has a certain dominant position, it also puts forward new requirements for local government officials. Local government officials need to have a certain level of government affairs and master computer-related skills, so as to establish a concise and efficient government operation model. However, at this stage, local governments are proficient in computer operation skills, and there are few public servants with a certain level of government affairs, and even some local governments are slow to change their minds and unwilling to learn. It can be seen that some local government officials have not yet fully adapted to the public management work environment under the background of "big data and the Internet of Things." There are few talents with high literacy and innovative consciousness in Shenyang. The development and growth of Shenyang's public management cannot be separated from high-tech talents. Therefore, it is worth thinking about how to attract talents and cultivate talents. Shenyang City has also paid attention to this issue recently and has transferred key personnel from various departments to conduct business training, focusing on cultivating the working ability and skills of local government officials, and correcting their thinking and understanding. These measures will help Shenyang City continue to promote public management.
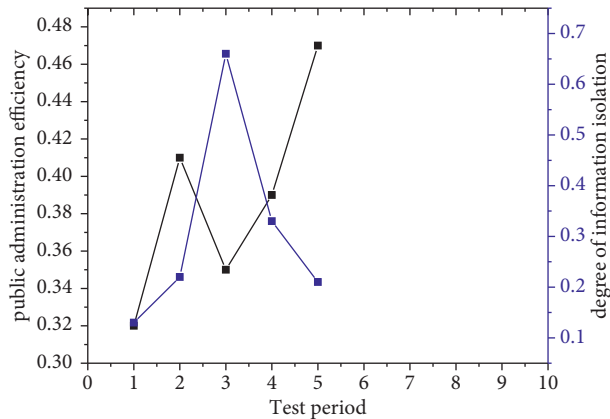
Figure 3: The public management efficiency of Shenyang Municipal Government is affected by the information island.

5. Countermeasures and Suggestions for Local Governments to Innovate Public Management under the Background of Big Data and Internet of Things

5.1. Innovate the Management System of Local Government. First, steadily promote the construction of the government's public management big data platform. In order to improve the construction of public management by local governments, it is necessary to combine the actual local conditions. The construction of public management needs to be continuously promoted in the direction of informatization and electronicization, and the management mechanism of local government affairs must be innovated. The local government can establish a unified public management information platform for the whole city according to the actual situation and continuously improve the basic database, realize the information sharing of various administrative units, and continuously improve the administrative efficiency of the government. Therefore, the relevant responsible persons of the local government need to take the lead. As the saying goes, "the train runs fast, all depends on the headband," and the grass-roots party organizations should give full play to the leading role, gather the wisdom and strength of everyone, and summarize experience. Lessons analyze the difficulties in the construction of public management and steadily promote the construction of public management. The local government can invite relevant scholars and professors from scientific research institutes and colleges and universities to conduct training in batches for relevant persons in charge of local party committees and governments related to public management, integrate existing resources and information, effectively transform the management mechanism of local governments, and provide efficient services for the people. After data analysis by professional institutions, it is found that after the government combines big data and Internet of Things technology to innovate public management methods, the people's satisfaction with the government has been greatly improved, and its specific situation is shown in Figure 4.

As can be seen from Figure 4, with the improvement of the Shenyang Municipal Government's ability to apply big data, the satisfaction of the masses has shown a rapid increase.

Second, increase the intensity of information disclosure. Local governments need to disclose major public opinion cases and cases that are of concern to the public in a timely manner. For hot-spot issues, the government needs to release official news on relevant information, explain the situation to the public in a timely manner, and crack the breeding ground for rumors. Local governments can use the "three micro-one end," newspapers, and information notification columns to customize the government information disclosure system by combining new media and traditional media to facilitate timely access by the masses and gradually establish multilevel and multiangle information disclosure channels.

5.2. Vigorously Improve the Public Service Capacity of Local Governments. Local governments need to serve the people wholeheartedly, provide corresponding policy assistance and relevant industry information, steadily promote the construction of public management informatization within the jurisdiction of local governments, and provide high-quality services. While developing the economy, the local government also needs to focus on improving people's livelihood and strive to improve the level of public services. In accordance with the local government's development plan, it should continuously improve the infrastructure within its jurisdiction, improve the medical, social, and other related resource systems, and create a public service system for the convenience of the people. In view of this, local governments need to unblock feedback channels, take the people as the core, build a public management platform centered on the people, attach importance to citizens' reasonable and legitimate demands, establish complaint feedback channels, listen to people's livelihood, and continuously improve the public management platform according to citizens' needs, to ensure the efficiency of the public service system.

Local governments can entrust some public management affairs to private enterprises or use bidding and other forms to outsource, such as technology research and development of electronic platforms, collection and processing of public management information, etc. This approach not only relieves the work pressure of public servants, but also streamlines the organizational structure of local governments, and the existing human resources can be devoted to economic construction. At the same time, outsourcing institutions with a higher degree of specialization are more professional and can efficiently complete the construction of the public management information platform.

5.3. Strengthen Network Construction and Actively Promote Information Resource Sharing and Business Collaboration. Big data and Internet of Things technology are the basis for local governments to implement government affairs disclosure, and they are also effective channels for citizens to understand government affairs information. The rapid development of electronic information technology has
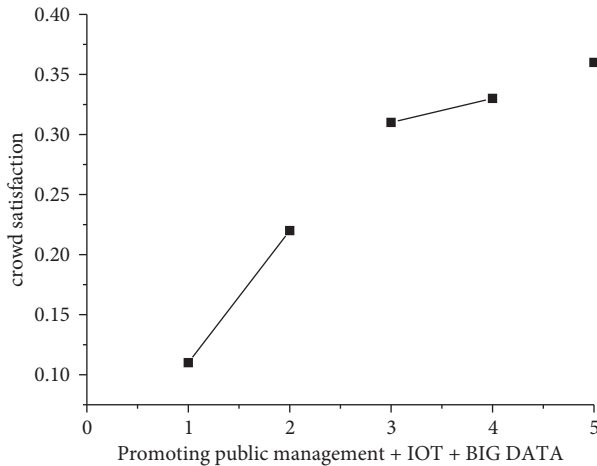
FIGURE 4: The changing trend of people's satisfaction with the government's public management innovation.

also increased the transparency of government affairs information and encouraged residents to participate in it. Residents can form a benign communication relationship with the government through the public management model and continuously consolidate the status of the local government management committee. In addition, enterprises within the jurisdiction can obtain relevant legal documents and relevant tax information in a timely manner through public management information, helping enterprises to devote themselves to economic construction more quickly. Finally, the implementation of public management by local governments can reduce administrative costs and continuously optimize work processes and management methods. At present, the local government has established the portal websites of various administrative units. In actual work, it is necessary to continuously improve relevant functions, realize "run at most once," and simplify the examination and approval procedures for enterprises, so that enterprises within their jurisdiction can complete the declaration and filing without leaving home, annual inspection, consulting, etc. At the same time, local governments also need to speed up the update of government information, set up full-time personnel to take charge of this matter, establish communication channels between management committees, enterprises, and residents, update relevant policy information in a timely manner, and ensure citizens and enterprises have the right to know. The local government can build the portal website into a service-oriented website focusing on the people and constantly enrich the service content. Process, build a full-service inscription, strengthen the resource cooperation and sharing of various administrative units, and actively promote information resource sharing and business collaboration. The people's work efficiency has also improved as shown in Figure 5.

As can be seen from Figure 5, after the use of big data technology to integrate public information, the information transparency of local governments has been improved, and the efficiency of public affairs has also improved.
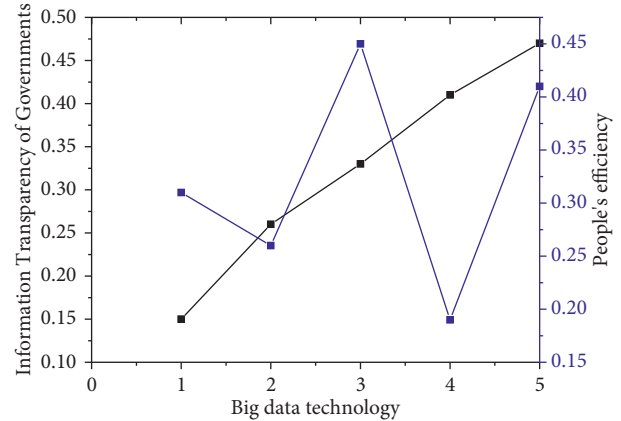

FIGURE 5: Changed data after combining with big data technology.

5.4. Strengthen the Training of Civil Servants and Improve the Management Level. Civil servants of local governments need to carry out business training in public management, focusing on improving the theoretical knowledge and practical skills of public servants, and setting different training courses according to the work content of personnel in different positions. At the same time, local governments also need to increase the training of public servants' informatization awareness, continuously improve the information literacy of public servants, help public servants to deeply understand the connotation, goals, practical methods, etc. of public management, and help them accurately obtain relevant information and do a good job in information screening, information collection, and information analysis, improve work efficiency, and transform work processes.

6. Conclusion

Big data and the Internet of Things are developing rapidly in a fast and irreversible trend. The application of big data also shows the broad prospects of big data and the Internet of Things. The Chinese government, enterprises, and individuals are working together to build a government cloud and transportation cloud, community cloud, enterprise cloud, and other demonstration systems. With the rapid development of data science, our country has paved the way for the application of new technologies such as big data and the Internet of Things in various industries. The continuous development of information technology has also achieved resource sharing and collaborative work. In view of this, the government innovates public management. The mechanism needs to actively use big data and the Internet of Things, rely on the construction of a public management platform, realize the interaction between the government and the public, integrate wisdom, dissolve identities, and reduce communication costs, so as to improve the government's administrative capabilities. This paper analyzes the characteristics of anonymity, equality, and interactivity of big data and the Internet of Things and proposes measures for the government to innovate public management methods under the background of big data and Internet of Things. It is hoped that the analysis in this paper can provide reference for

relevant departments. In the next research, we will continue to adopt the method of comparative research, select two districts in Shenyang as the survey objects, and build a scientific system to promote the improvement of public services by comparing the work efficiency of several representative types in public services.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

It is declared by the authors that this article is free of conflicts of interest.

Acknowledgments

References

[1] Y. L. Zhang, "Research on the innovation model of public management in the era of big data," *PR World*, vol. 55, no. 08, pp. 187-188, 2021.

[2] W. Y. Xia, "An analysis of the innovation model of public management in the era of big data," *Finance and Economics*, vol. 62, no. 01, pp. 54-55, 2021.

[3] R. Li, L. Nie, Q. Wang et al., "Phytochemical constituents, chemotaxonomic significance and anti-arthritic effect of Eucommia ulmoides Oliver staminate flowers," *Natural Product Research*, vol. 39, no. 16, pp. 1–5, 2020.

[4] Y. Gu, "Public management innovation in the era of big data," *Modern Economic Information*, vol. 57, no. 18, p. 122, 2019.

[5] Y. H. Hao, "Challenges and innovative models of public management in the era of big data," *China Market*, vol. 63, no. 31, p. 193+196, 2018.

[6] J. Wang, C. Xiao, Z. Wei, Y. Wang, X. Zhang, and Y Fu, "Activation of liver X receptors inhibit LPS-induced inflammatory response in primary bovine mammary epithelial cells," *Veterinary Immunology and Immunopathology*, vol. 197, no. 37, pp. 87–92, 2018.

[7] S. G. Wang, "Public management innovation in the era of big data," *Management Observation*, vol. 71, no. 24, pp. 62-63, 2018.

[8] X. H. Zhang, B. S. Fei, H. Fang, and D. Zhang, "Exploration of the challenges and innovative models of public management in the era of big data," *Journal of Anhui University of Science and Technology*, vol. 18, no. 05, pp. 11–15, 2016.

[9] Y. W. Zhang, "Challenges and innovative countermeasures faced by public management in the era of intelligent network," *China Management Informatization*, vol. 24, no. 24, pp. 217-218, 2021.

[10] W. G. Zhang, D. Z. Ni, and C. F. Wang, "New challenges and repositioning of public management professionals in the new era," *Journal of Nanyang Normal University*, vol. 20, no. 03, pp. 62–66, 2021.

[11] P. R. Brown, "Public value measurement vs. Public value creating imagination - the constraining influence of old and new public management paradigms," *International Journal of Public Administration*, vol. 44, no. 10, pp. 808–817, 2021.

[12] M. Vollstädt, "Public Entrepreneurship. Zur Unternehmerisierung der öffentlichen Verwaltung," *der moderne staat - Zeitschrift für Public Policy, Recht und Management*, vol. 14, no. 1-2021, pp. 165–184, 2021.

[13] B. Merriman, "Public management's problems are legal problems: how law contributes to inequity in contemporary governance," *Perspectives on Public Management and Governance*, vol. 4, no. 2, pp. 213–228, 2021.

[14] X. Wang, "Research on the utility and efficiency of public management supported by computer big data," *Journal of Physics: Conference Series*, vol. 1915, no. 3, Article ID 032016, 2021.

[15] M. Taniguchi, "Impact of new public management on the efficiency of Japanese museums," *Asian Economic Journal*, vol. 35, no. 1, pp. 76–95, 2021.

[16] J. I. Criado, T. F. Dias, H. Sano, F. Rojas-Martín, A. Silvan, and A. I. Filho, "Public innovation and living labs in action: a comparative analysis in post-new public management contexts," *International Journal of Public Administration*, vol. 44, no. 6, pp. 451–464, 2021.

[17] J. Chen, Q. Wang, J. Huang, and X. Chen, "Motorcycle ban and traffic safety: evidence from a quasi-experiment at Zhejiang, China," *Journal of Advanced Transportation*, vol. 2021, pp. 1–13, 2021.

[18] Z. Lv, S. Lv, H. Feng, and H. Lv, "Clinical characteristics and analysis of risk factors for disease progression of COVID-19: a retrospective Cohort Study," *International Journal of Biological Sciences*, vol. 17, no. 1, pp. 1–7, 2021.

[19] B. Cao, S. Fan, J. Zhao et al., "Large-Scale many-objective deployment optimization of edge servers," *IEEE Transactions on Intelligent Transportation Systems*, vol. 22, no. 6, pp. 3841–3849, 2021.

[20] B. Cao, Y. Zhang, J. Zhao, X. Liu, L. Skonieczny, and Z. Lv, "Recommendation based on large-scale many-objective optimization for the intelligent internet of things system," *IEEE Internet of Things Journal*, vol. 62, p. 1, 2021.

[21] P. Boselie, J. Van Harten, and M. Veld, "A human resource management review on public management and public administration research: stop right there…before we go any further before we go any furthe," *Public Management Review*, vol. 23, no. 4, pp. 483–500, 2021.

[22] H. G. Frederickson, "Bureaucrats without borders: public management and the end of geography," *Perspectives on Public Management and Governance*, vol. 4, no. 1, pp. 14–19, 2021.

[23] Z. Lv, Z. Yu, S. Xie, and A. Alamri, "Deep learning-based smart predictive evaluation for interactive multimedia-enabled smart healthcare," *ACM Transactions on Multimedia Computing, Communications, and Applications*, vol. 18, no. 1s, pp. 1–20, 2022.

[24] B. Zhu, Q. Zhong, Y. Chen et al., "A novel reconstruction method for temperature distribution measurement based on ultrasonic tomography," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, vol. 81, p. 1, 2022.

[25] J. He and H. Li, "On the influence of information technology on the development of public management," *Journal of Physics: Conference Series*, vol. 1802, no. 4, Article ID 042054, 2021.

[26] T. Tõnismann and J. Virtanen, "Science policy meets post-New Public Management: Estonian and Finnish reforms

2012-2015," *Journal of Baltic Studies*, vol. 52, no. 1, pp. 127–145, 2021.

[27] X. Zenggang, L. Xiang, Z. Xueming et al., "A service pricing-based two-stage incentive algorithm for socially aware networks," *Journal of Signal Processing Systems*, vol. 67, 2022.

[28] W. Zheng, X. Tian, B. Yang et al., "A few shot classification methods based on multiscale relational networks," *Applied Sciences*, vol. 12, no. 8, p. 4059, 2022.

[29] E. Stroińska, "New public management as a tool for changes in public administration," *Journal of Intercultural Management*, vol. 12, no. 4, pp. 1–28, 2020.

[30] W. Zheng and L. Yin, "Characterization inference based on joint-optimization of multi-layer semantics and deep fusion matching network," *PeerJ Computer Science*, vol. 8, p. e908, 2022.

[31] W. Zheng, Y. Zhou, S. Liu, J. Tian, B. Yang, and L. Yin, "A deep fusion matching network semantic reasoning model," *Applied Sciences*, vol. 12, no. 7, p. 3416, 2022.

[32] W. C. Usman, "Reimagining public managers: delivering public value," *Taylor and Francis*, vol. 10, no. 6, p. 11, 2020.

[33] L. Yao, X. Li, R. Zheng, and Y. Zhang, "The impact of air pollution perception on urban settlement intentions of young talent in China," *International Journal of Environmental Research and Public Health*, vol. 19, no. 3, p. 1080, 2022.

[34] L. He, L. Mu, J. A. Jean et al., "Contributions and challenges of public health social work practice during the initial 2020 COVID-19 outbreak in China," *British Journal of Social Work*, vol. 66, Article ID bcac077, 2022.

[35] Public Administration, "Researchers at inland Norway university of applied sciences target public administration (employees' resistance to users' ideas in public service innovation)," *Politics & Government Business*, vol. 6, no. 3, p. 44, 2020.

[36] Public Administration, "Researchers' work from university of Kansas focuses on public administration (the myth of bureaucratic neutrality: institutionalized inequity in local government hiring)," *Politics & Government Week*, vol. 7, no. 2, p. 33, 2020.

[37] Public Administration, "University of limpopo researcher updates current data on public administration (An Afrocentric critique of sub-state actors in South Africa's foreign policy: case of Limpopo province)," *Politics & Government Week*, vol. 6, no. 3, pp. 27-28, 2020.