

Administrative System in the Transformation of Digital Economy and the Cultivation of Innovative and Entrepreneurial Talents Based on the Deep Learning Model

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Abstract: In the new era, facing the challenges of digital transformation, talent development should follow the path of deep learning model. In the traditional administrative system, there is a lack of specialized educational resources, practical resources and other aspects in the process of talent training. This paper aimed to analyze the administrative management system in the process of digital economy transformation and innovation and entrepreneurship talent cultivation based on the deep learning model. This paper proposed the composition of convolutional neural network and the training of convolutional neural network model. Based on this research, the paper analyzed the experimental results of the research on administrative management system in the process of digital economic transformation and talent training. The experimental results of this paper showed that in terms of the number of innovative talents, the information service industry also followed the trend of industrial development, with 69600 professional and technical personnel by 2024. However, there were only 8300 state-owned and urban public enterprises, mainly concentrated in private and individual enterprises, which showed that information services showed entrepreneurial economic signs and a high degree of science and technology. In terms of distribution of professional talents, the output value of information service industry in City A and City B was the highest, with 37.024 billion yuan and 13.009 billion yuan respectively, followed by City C and City D. All types of information service companies were also concentrated in Cities A and B. In particular, 18 distinctive software parks have been built in City A since 2019. As of 2023, the output value of information service industry in City A has reached 15.715 billion yuan. With the transformation of the digital economy, the key to innovative and entrepreneurial talents lies in the administrative management system. On the one hand, the digital economy has spawned innovative talents. However, due to social public management problems, the ability of innovative talents cannot be improved. On the other hand, the digital economy has provided a series of opportunities for the development of enterprises, including: changes in enterprise models and changes in business philosophy. "Things" and "talents" complement each other. The development of "things" depends on the development of "people" themselves and the improvement of social public services.

Keywords: Administrative Management System, Deep Learning, Talent Training, Digital Economy

1. Introduction

In the context of the digital economy era, the new economic system driven by digital technology has become one of the main trends of global development. China is one of the most active and potential markets in the global digital economy. It brings new challenges and opportunities on such a huge scale. Digital economy can not only greatly promote the national economic and social development, but also has great significance for the Chinese government and related industries. Digital technology has not only brought great value and opportunities to China's economic development. At the same time, it is also constantly promoting the construction of smart cities in China. It can be said that any industry can achieve leapfrog development through innovation. Therefore, in-depth study of the problems and shortcomings of the administrative system in the process of China's digital economy development is one of the problems that need to be solved in the process of China's development, reform and opening up and national modernization in the future.

According to the existing research progress, different researchers have also conducted

corresponding cooperative research on the administrative management system. Serkina Yana I. aimed to make a theoretical analysis of the premise, challenges and trends of modernity, with a view to bringing about global changes in contemporary university governance management system [1]. Winarno Agung's main purpose was to establish a website based school financial management system. The system he developed was confirmed and tested by professional media personnel [2]. Iqbal Muhamad Iqbal aimed to show the effect of the electronic court system on combating corruption in the court administration [3]. Peeters Rik analyzed the unexpected impact of public services and welfare provided to the public by the administrative state's main data management system [4]. However, these scholars lack some technical argumentation on the exploration of management system. It is found that there is a better discovery in the research of management system based on deep learning. In this regard, the relevant literature on in-depth learning has been consulted.

Some scholars also have some research in depth learning. Cox Tony's research found that the principle of deep learning was applicable to human beings. It could not only help people at all levels of government or management to effectively deal with large-scale and decentralized risks, but also show how to conduct comprehensive decision-making analysis, continuous learning and improvement [5]. Based on big data cloud computing, Zhao Yanmei made an in-depth discussion on the scale measurement technology and application of deep learning digital economy [6]. but only unilaterally discussed its significance. However, these scholars did not analyze the administrative management system in the process of digital economic transformation and innovation and entrepreneurship talent training based on the deep learning.

This paper has drawn the following conclusions by studying and analyzing the administrative management system in the process of digital economic transformation and innovation and entrepreneurship talent training. With the transformation of digital economy, the level of professional talents was gradually developing towards high-tech. Professional talents were clustered in space with obvious regional characteristics. At the same time, the diversification of talents means that the improvement of public service performance and management level is urgently needed.

2. Administrative Management System and Methods in Training Innovative and Entrepreneurial Talents

2.1 Characteristics of Administrative Management System

From the perspective of administration, China's administrative system is still in the traditional administrative stage. The concept of traditional administrative management emphasizes the government as the leader, and implements the system of relative separation of multiple management systems. In the face of enterprise transformation, talent management and other aspects, there is still a lack of professional technical support and guidance. In the traditional administrative management mode, from the perspective of people, the division of department functions is adopted, and each functional department is responsible for an enterprise or a project respectively. In terms of handling affairs, multiple functional departments are responsible for different aspects of work. Administrative personnel lack the necessary training and guidance for personnel who lack sense of responsibility and work experience. In the era of digital economy, the government should play an important role in promoting industrial transformation by information technology [7]. Enterprises should also actively carry out market transformation and talent training reform to meet the development needs in the digital era. Digital technology can also bring new changes to social life. The traditional administrative system should also be reformed and improved in a timely manner in the face of new problems [8]. Therefore, it is of great significance to conduct innovative research on the combination of administrative management system and digital technologies such as artificial intelligence in the new era. Its characteristics need to be specifically analyzed in order to better realize the change of government public service governance under the in-depth learning in the future.

2.2 Construction of Government Public Service System from the Perspective of In-depth Learning Model

In modern society, there are many contradictions and conflicts that are difficult to coordinate between people and the government. In order to achieve digital transformation, governments at all levels should actively seek transformation and optimization of intergovernmental functions. The construction of a new public service system is a very necessary and urgent measure. It is not only

important to improve the scientific level of government affairs and promote the digital transformation of the government in the new era, but also plays an effective role in ensuring social governance and service objects [9]. Figure 1 shows the construction of the public service system. Deep learning model is an important branch of deep learning theory, and also the main way to realize deep learning practice. This model aims to build an intergovernmental service system through a learning model. After the development of deep learning to a certain stage, human beings have a certain degree of thirst for external information, and people hope to have better living space and better employment opportunities. At the same time, human society has also moved from closed to open and created a large number of employment opportunities and innovation environment [10]. Therefore, governments at all levels should start from the deep learning model to gradually establish a reasonable and effective public service system that conforms to the characteristics of the model under the deep learning theory.

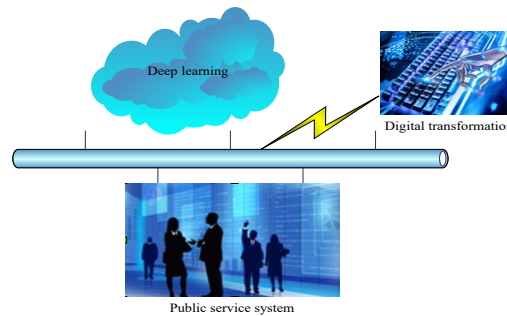


Figure 1 Construction of public service system

2.3 Convolution Neural Network Based on Deep Learning

Convolutional neural network (CNN) is one of the most commonly used deep learning models. CNN is a deep neural network based on convolution structure, which is based on multi-level perceptron. On this basis, the depth of the network is increased [11].

(1) Convolution neural network composition

Convolution neural network is an improvement of back-propagation neural network. Its network structure consists of five parts. In addition to input layer and output layer, it also includes convolution layer, pooling layer and complete connection layer [12]. Compared with back-propagation neural networks, CNN does not use a fully connected structure. It only makes local connection at each level, and combines the method of weight distribution, which greatly reduces the number of network parameters [13]. Figure 2 shows the structure of convolutional neural network.

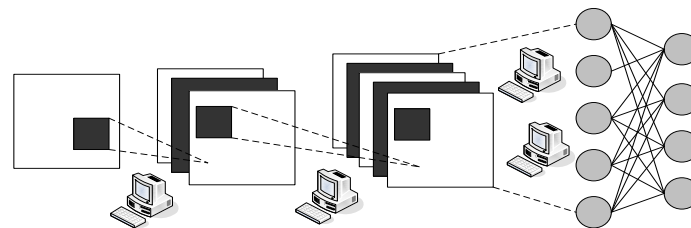


Figure 2 Convolution neural network structure

1) Input layer

In the input layer of CNN, the input data can be one-dimensional, two-dimensional, three-dimensional, which need to be determined through actual research.

2) Convolute layer

In the convolution layer, the convolution check is used to extract the features of the convolution layer, and the trigger function is used to map the nonlinear features of the output of the convolution layer. In the convolution operation, all convolution cores are traversed in a manner similar to the sliding window [14]. In the feature space of all input data, the convolution core plays a role. The calculation formula of convolution layer is as follows:

$$C_k^a = g\left(\sum_{c \in Z_k} C_k^{a-1} * L_{ok}^a + n_k^a\right), k = 1, 2, \dots, m \quad (1)$$

Among them, C_k^a represents the output of the k th convolution kernel of layer a . $g(\cdot)$ represents the activation function. C_k^{a-1} represents the output of the k th convolution kernel of layer $a-1$. $*$ represents the convolution operation. L_{ok}^a represents the o convolution window corresponding to the k th convolution kernel of layer a . n_k^a represents the offset of the k th convolution kernel.

3) Pooling layer

The pooling layer is also called the lower sampling layer because it samples the convolution data obtained from the network of the upper layer [15]. During pooling, pool cells calculate the value of a local area, while adjacent pool cells read and process the data of a local area by using the method of row or column translation. The calculation formula of the pool layer is as follows:

$$C_k^a = g(\text{down}(C_k^{a-1}) + n_k^a), k = 1, 2, \dots, m \quad (2)$$

Among them, $\text{down}(\cdot)$ represents pooling function are three most commonly used pooling methods. The first is maximum pooling, that is, maximum pooling is to divide the local maximum area into the maximum value of the corresponding area after the pool. That present, there e second type is the average pool. The average pool is the result of pooling the average value of a local region as the corresponding region. The third type is random pooling, that is, random pooling is to randomly select data in local areas according to the probability matrix to obtain the corresponding regional pool [16].

4) Full connection layer

After the convolutional neural network completes several convolutional layers and pooling layers, a complete connection layer is connected at the end of the network. It is called the "full connectivity layer" because all its neurons are connected to all previous neurons [17].

The calculation formula of the full connecting layer is as follows:

$$C^a = g(C^{a-1}E^a + n^a) \quad (3)$$

5) Output layer

The output layer can classify, predict and output the results. In convolutional neural networks, Softmax classification method is usually used. When using convolutional neural network for prediction, the type of network should be determined according to the needs of prediction [18]. On this basis, the Softmax classifier is used for prediction, and the category with the highest probability is the category of the prediction target. The calculation formula is as follows:

$$\text{Softmax}(c_1, c_2, \dots, c_m) = \frac{1}{\sum_{n=1}^m \exp(c_n)} (\exp(c_n))_{m \times a} \quad (4)$$

(2) Convolution neural network model training

The training of convolutional neural network is divided into two stages: forward propagation of information and back propagation of error. In the learning process, the reverse transmission of errors and the forward transmission of information are also very important [19].

1) Positive transmission of information

A sample (C, U_q) is extracted from the training sample. Among them, C is the input of the network and U_q is the expected output of the network. The samples are input into the convolutional neural network that has completed the initial setting, and finally the real training sample P_q is output through the interaction of convolution operation and pooling operation, as shown in the following formula:

$$P_q = g(\dots (g(g(CE_1)E_2) \dots)E_m) \quad (5)$$

2) Back propagation of error

The error reverse transmission adopts the chain derivative method to perform gradient operation on neurons at each level. The output result P_q is compared with the expected output value U_q , and the error between them is calculated. The calculation formula is as follows. When the error exceeds the set threshold, it enters the back propagation phase of the error. In this process, the gradient decreasing method is used to solve the upper layer error step by step, and correct the weight until the maximum convolution layer is reached, thus realizing the weight and offset of the network.

$$R_q = \frac{1}{2} \sum_n (U_q - P_q)^2 \quad (6)$$

3. Experimental Results of the Administrative Management System in the Digital Economic Transformation and the Cultivation of Innovative and Entrepreneurial Talents

From the theoretical analysis and the practice of developed countries, it can be seen that under the conditions of entrepreneurial economy, the occupational structure of social talents shows a trend of "advanced", that is, the number of "occupational types" and "occupational posts" increase[20-21]. With the increasing demand for high-tech personnel in the market, the proportion of high-level professionals in the whole industry has increased, while the proportion of low-level workers has decreased. At the same time, senior professions such as professional managers and white-collar workers are becoming more and more specialized. In the current numerous industries, the information service industry is growing rapidly with high added value. New enterprises integrating cultural creativity and professional technology continue to emerge. Alibaba and other companies are also constantly bringing new changes to people's social life. Taking the information service industry in Guangdong Province as an example, this paper verifies the typicality and development status of the information service industry in the entrepreneurial industry from several perspectives, such as the status of industrial added value, the size and nature of enterprises in the industry. The industry is taken as an example to examine the changing trend of the structure of professional talents.

3.1 Development Status of Information Service Industry in Guangdong Province

The development of Guangdong Province's information service industry shows typical "entrepreneurship" characteristics: continuous growth of added value, compact technology updating cycle, high level of employees, and industrial structure dominated by small and medium-sized enterprises. The government pays close attention to the development of software and information technology industry, and believes that the leading position and supporting role of software and information technology service industry in the national economy would become increasingly prominent in the critical period of the deep integration of informatization and industrialization tech. From the overall situation of the industry, since 2017, the absolute number of gross output value of information technology service industry in Guangdong Province has continued to grow. Its value-added index has surpassed that of the tertiary industry since 2017, and has continued to grow. Figure 3 shows the GDP and value-added index of information service industry and tertiary industry in Guangdong Province. Among them, Figure 3 (a) shows the gross product of the tertiary industry and the gross product of the information service industry. Figure 3 (b) shows the value-added index of the tertiary industry and the value-added index of the information service industry.

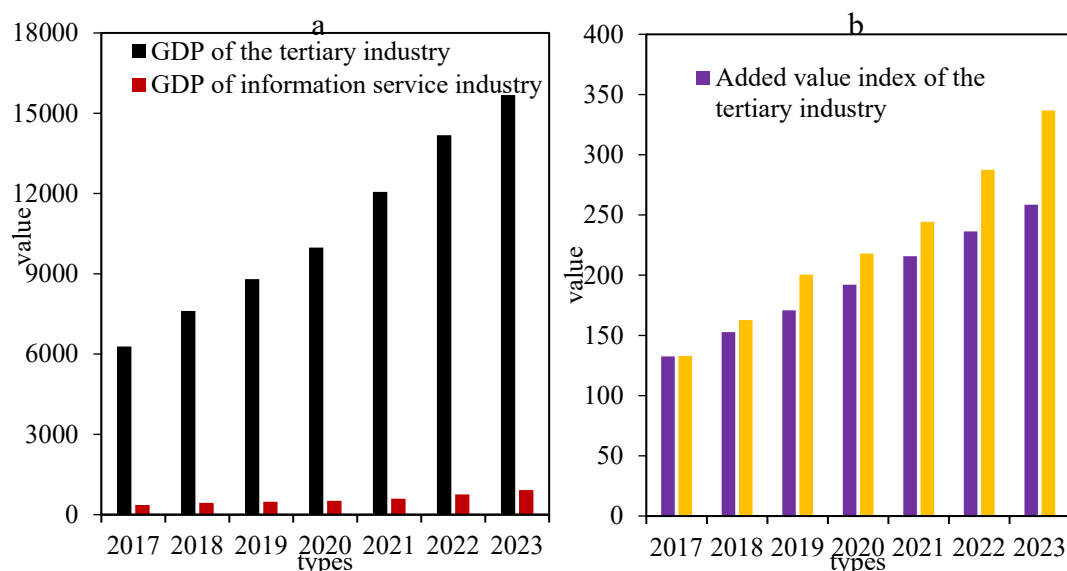


Figure 3 GDP and value-added index of information service industry and tertiary industry in Guangdong Province (unit: 100 million yuan)

Figure 4 shows the proportion of the information services industry in Guangdong Province's tertiary industry. Since 2019, impacted by the COVID-19 pandemic and global economic uncertainty, the information services industry's share of the total value of the tertiary industry experienced a temporary slowdown in 2021. Subsequently, with the recovery of the domestic and international economies and

the stimulus of relevant national policies, it quickly rebounded.

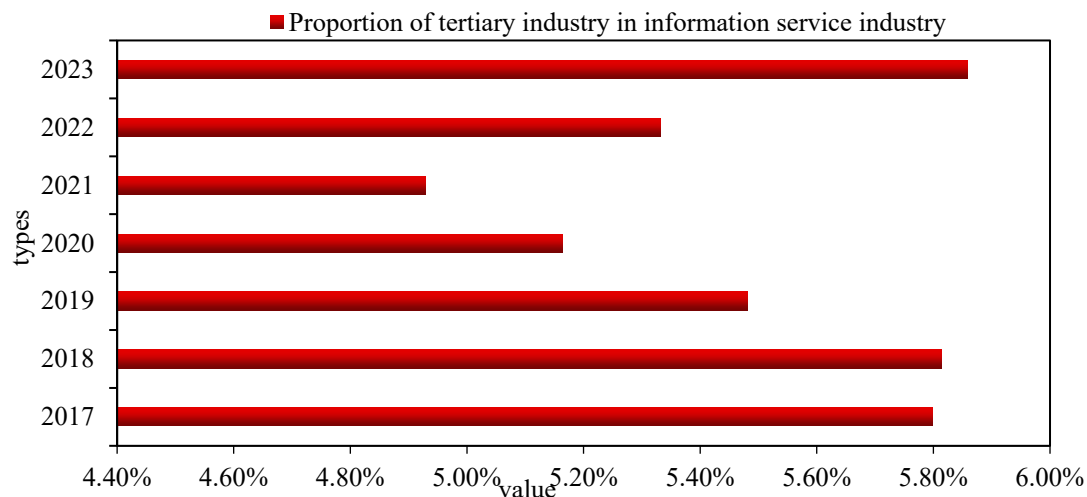


Figure 4 The proportion of the tertiary industry in the information service industry of Guangdong Province

The proportion of information services in the tertiary industry fluctuates with changes in economic forms, but its internal industries have always maintained a good order. The entire industry layout is reasonable, and the risk prevention awareness of enterprises has also been strengthened. Enterprises pay more attention to technology research and development and human capital investment, reducing their dependence on external technology.

3.2 Level of Professional Talents Tends to be High-tech

The leap of professional level is shown as: the promotion of professional and technical level and the improvement of the quality of employees. The demand of professional work for practitioners stems from the interaction between the improvement of productivity and the renewal of technology, including the spontaneous evolution of disciplines, education levels and technology. This process also promotes the quality improvement of practitioners. The change of the proportion of vocational and technical personnel and the educational background structure can clearly reflect the trend of this change.

(1) Number and title composition of professional and technical personnel

The time series data in Figure 5 clearly shows the growth of basic professionals in the entire industrial sector. The information service industry also follows the general trend of industrial development. As of 2024, the number of professional and technical talents in the industry has reached 69600, while the number of state-owned and urban public enterprises is only 8300, mainly concentrated in private and individual enterprises. It shows that information services show entrepreneurial economic signs, with a high degree of science and technology. However, in this process, the accumulation of human resources in private enterprises still needs to be further improved.

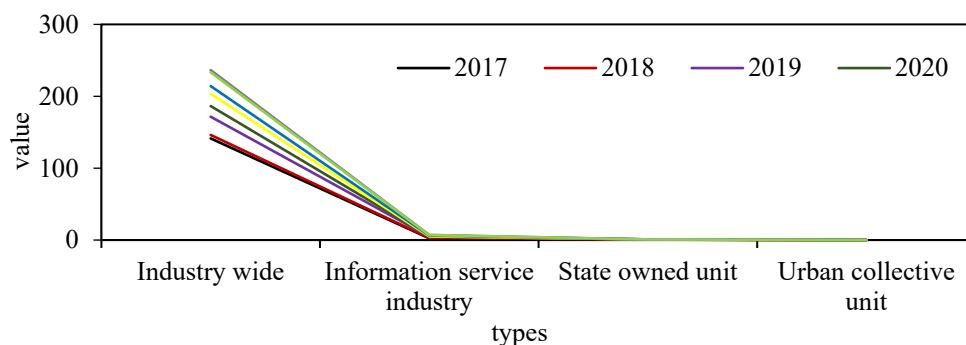


Figure 5 Number of professional and technical personnel in the information service industry (unit: 10000)

As shown in Table 1, the proportion of medium and senior technicians in government departments

and institutions has reached 42.02%, higher than 16.67% of the middle and senior positions in enterprises. Among them, 83.33% of the enterprises have junior professional titles and have not employed technical personnel.

Table 1 Professional and technical personnel of enterprises and institutions by professional position in 2023 (unit: person)

	Government-affiliated institutions	Proportion	Enterprise unit	Proportion
Total	1411	-	720	-
Senior positions	118	8.36%	19	2.64%
Medium-grade positions	475	33.66%	101	14.03%
Junior position	792	56.13%	238	33.05%
Unemployed	26	1.84%	362	50.28%

(2) Composition of educational level of employees

It can be seen from Table 2 that among the three major industrial types in Guangdong Province, the proportion of computer service talents with high academic qualifications (postgraduates and above) is the lowest, only 2.06%. The proportion of high-tech personnel in the software service industry is the highest, accounting for 6.63%. The employees with high school, junior high school and below degrees account for 31.53% of the whole industry, most of which are in the telecommunications industry and computer service industry.

Table 2 Education composition of information service industry employees in Guangdong Province (unit: person)

	Total number of people	Postgraduate or above	undergraduate	junior college	high school	Junior high school and below
Telecommunications and other information services, computer services and software services	181450	6417	59177	58656	42891	14309
Proportion	-	3.54%	32.61%	32.32%	23.64%	7.89%
Telecommunications and other information services	84553	1937	25926	31856	20307	4527
Proportion	-	2.29%	30.66%	37.68%	24.02%	5.35%
Computer service industry	42589	879	7330	9850	16188	8342
Proportion	-	2.06%	17.21%	23.14%	38%	19.59%
Software service industry	54308	3601	25921	16950	6396	1440
Proportion	-	6.63%	47.73%	31.21%	11.78%	2.65%

Among private enterprises, computer services and software services are the two largest industries. Among them, 34% are students with education level below middle school, as shown in Figure 6. The reason is that in the computer industry, such as electronic component manufacturing, electronic component assembly and debugging, mainboard or mold maintenance, machine tool operation, warehouse management, after-sales service, etc., the education requirements for employees are not high. With the development of industry, highly educated and high-tech talents must be vigorously introduced. A large number of productive practitioners with low education and low skills are eliminated through scientific and technological efforts to update the production mode of computer hardware products.

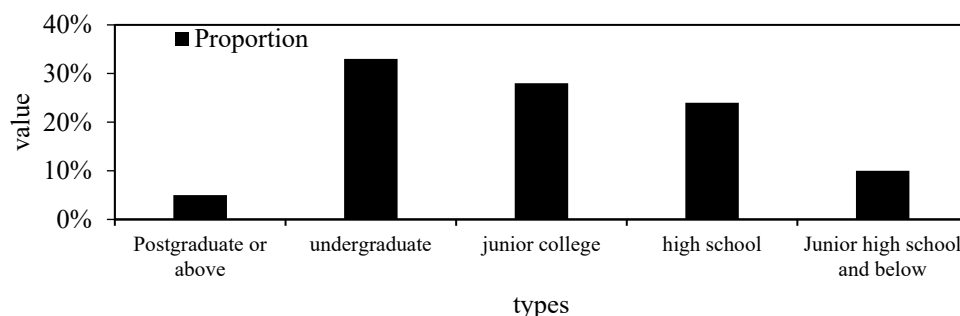


Figure 6 Education composition of information service industry employees

3.3 Spatial Distribution Area of Professional Talents with Obvious Characteristics

As can be seen from Figure 7, the information service industry output value in City A and City B is the highest, at 37.024 billion yuan and 13.009 billion yuan respectively, followed by City C and City D. All kinds of information service enterprises in the province are also concentrated in City A and City B. In particular, City A has built 18 software parks (also known as "e-commerce parks") with their own characteristics since 2019. By 2023, the added value of the information service industry in City A will be 15.715 billion yuan. It can be said that the information service industry in City A has become an important pillar industry. City C follows City B, with a high output value of information services and a good industrial development trend. The information service industry in other regions (such as City H and City I) is concentrated in regional central cities (generally administrative centers), while the information service industry in City E is mainly dominated by small commodity markets.

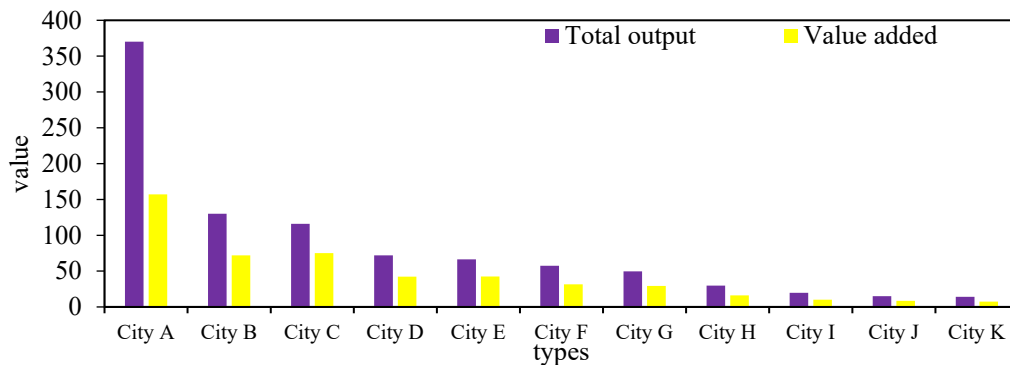


Figure 7 Output value of information service industry in Guangdong Province (unit: 100 million yuan)

In addition, it can be seen from Figure 8 that the output value of information services in each region is consistent with that of the tertiary industry, which reflects the importance and representativeness of information services in the tertiary industry. The information service companies in Guangdong Province are concentrated in the central cities of each region, which has a significant spatial clustering feature, reflecting the development characteristics of the tertiary industry in different regions. Therefore, while industrial agglomeration is taking place, it is inevitable that occupational population can gather. As the economic, political and cultural center of Guangdong Province, City A gathers a large number of colleges and universities.

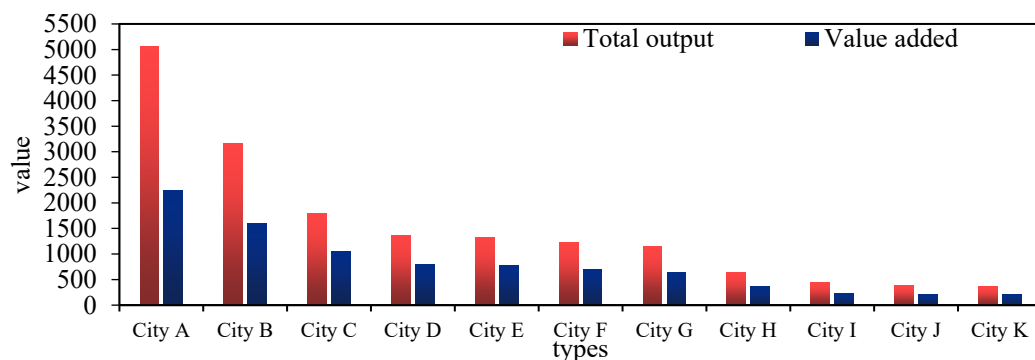


Figure 8 GDP of the tertiary industry by region (unit: 100 million yuan)

In the entrepreneurial economy, there are different dynamic changes between different types of industries, and the demand for different types of talents presents the following two trends. One is high-end innovation and R&D talents. They have a farsighted strategic vision, the ability to design, deploy and coordinate, and can accurately grasp the mainstream in the tide of technological trends. Of course, the most important thing is that they should have advanced technical knowledge. The second category is comprehensive technical workers with certain cultural quality. They are not only proficient in professional technology and skilled, but also have the spirit of pioneering. They can solve the key problems in technology and technology in practical work, that is, "skilled workers with hands and brains". These two types of talents, although of different levels, are indispensable resources in the development of entrepreneurial economy. They need to have the ability of self improvement, professional planning, exploration and reflection. They should also be able to keep pace with the times,

constantly accept new ideas, new technologies, or go further and create new technologies.

3.4 Key Factors for Cultivating Innovative and Entrepreneurial Talents

In the past traditional stage, the traditional administrative management system has a lot of drawbacks. For example, the economic development mode with administrative intervention as the core has problems such as low resource allocation efficiency, misplaced government functions, and weak public service capacity. Based on the inertial thinking of traditional administration, this model is difficult to adapt to the needs of the times. At the same time, under the "Internet plus" model, there are problems such as the low degree of cross sectoral and cross industry communication, and the poor information dissemination. This not only restricts the deep application of digital economy in social governance, but also seriously affects the modernization level of public service governance capability [22]. At the same time, based on the traditional administrative management system, the traditional educational resources and practical resource allocation methods are lack of systematic reform and innovation. Under the "Internet plus" model, various new business forms are showing a trend of rapid development and explosive growth. Therefore, higher requirements are needed for talents, more professional, high-quality and modern requirements. This requires the country to establish and improve the types of talents required by various new forms of economic organizations, including "Internet plus", which provides basic support and guarantee for innovative and entrepreneurial talents from the management system.

4. Conclusions

In the process of digital transformation, the relationship between talent and innovation is a focus. On the one hand, the digital economy has brought about the creation of innovative and entrepreneurial talents. However, due to social public management problems, it is difficult to improve talent training and innovation ability. On the other hand, the digital economy has brought a series of opportunities, including changes in business models and management concepts. "Talents" and "things" are interdependent. Only the development of "people" and the improvement of social public service can promote the development of "things". Based on this, the in-depth learning model is introduced into the field of government public services to provide high-quality public services for talents. The demand for talents is diversified. In the future, governments at all levels should actively change their roles from the separation of "managers" and "service providers" to the integration of public governance platforms and decision-making platforms. Knowledge and ability are viewed as an element. Communication between people is solved as a problem. Information technology is used to make decisions. Personal privacy needs to be taken seriously. In this way, public service performance and management level can be improved to provide intellectual support and technical guarantee for the national economic and social development. This article has discussed from two aspects: talent training and social public service. It summarized the problems existing in the current government public service field and promoted the cultivation of innovative and entrepreneurial talents. First, the government should strengthen professional education for innovative and entrepreneurial talents in the field of innovation education. Second, the government established a data-driven public service operation model. Third, the government established a public governance platform in the field of public services. Fourth, the government established a public service data resource center. Fifth, the construction of a learning government was strengthened.

References

- [1] Serkina Yana I., and Anastasia V. Logvinova. "Administrative management of universities: background and consequences." *Amazonia Investiga* 8.22 (2019): 673-683.
- [2] Winarno Agung, Yuli Agustina, and Ria Vinola. "Developing website-based school financial administrative management system during covid-19 pandemic." *International Journal of Business, Economics and Law* 22.1 (2020): 167-172.
- [3] Iqbal Muhamad Iqbal, Susanto Susanto, and Moh Sutoro. "Functionalization of E-Court System in Eradicating Judicial Corruption at The Level of Administrative Management." *Jurnal Dinamika Hukum* 19.2 (2019): 370-388.
- [4] Peeters Rik, and Arjan Widlak. "The digital cage: Administrative exclusion through information architecture—The case of the Dutch civil registry's master data management system." *Government Information Quarterly* 35.2 (2018): 175-183.

- [5] Cox Tony. "Muddling-through and deep learning for managing large-scale uncertain risks." *Journal of Benefit-Cost Analysis* 10.2 (2019): 226-250.
- [6] Zhao Yanmei, and Yixin Zhou. "Measurement method and application of a deep learning digital economy scale based on a big data cloud platform." *Journal of Organizational and End User Computing (JOEUC)* 34.3 (2022): 1-17.
- [7] Maria Oikonomidou, and Konstantinidis Ilias. "The effect of administrative actions on satisfaction of primary and secondary public school principals." *Journal of Contemporary Education Theory & Research (JCETR)* 4.1 (2020): 21-27.
- [8] Manuhutu Melda Agnes, Lulu J. Uktolseja, Sarsa F. Sitaniapessy, Cynthia A.K. Maradesa, Meldi Manuhutu, Abraham Manuhutu. "Implementation of tourist nature production in domestic and international practice." *Economics. Ecology. Socium* 2.1 (2018): 111-121.
- [9] Lin Wen-Cheng, and Hsin-Hung Cheng. "Enhancing marine administrative management based on human factor through safety criteria." *Journal of Marine Science and Technology* 29.3 (2021): 268-279.
- [10] Kostetska, Kateryna. "Trends of development of administrative management of recreational and tourist nature production in domestic and international practice." *Economics Ecology Socium* 2.1 (2018): 111-121.
- [11] Gidayani, Gidayani, Idham Kholid, Meriyati Meriyati, Septuri Septuri, Koderi Koderi. "Service Orientation, Integrity and Commitment to Students; Administrative Performance Management in Madrasah." *Al-Tanzim: Jurnal Manajemen Pendidikan Islam* 6.1 (2022): 91-104.
- [12] Kim Ji-Hye, Sung-Ho Yoon, and Dongmin Yang. "A Study on the Service of the Integrated Administrative Information Dataset Management System." *Journal of Korean Society of Archives and Records Management* 22.2 (2022): 27-49.
- [13] Zhang Han, and Kim Kyung Yee. "Research on the Reform and Innovation of University Administrative Management System Based on Learning Organization Theory." *International Journal of Social Science and Education Research* 5.5 (2022): 608-615.
- [14] Shishakly R., A. Sharma, and L. Gheyathaldin. "Investigating the effect of learning management system transition on administrative staff performance using task-technology fit approach." *Management Science Letters* 11.3 (2021): 711-718.
- [15] Anabel Aranibar-Molina, and Edward Flores. "A look at administrative management and labor conflicts in Latin America." *Specialusis Ugdymas* 1.43 (2022): 4843-4849.
- [16] Ridei Nataliia M., Tytova Nataliia M, Diegtiar Oleg A, Pavlenko Dmytro H, Slabetskyi Oleksandr M. "Administrative Management of Improvement Processes of Socio-Cultural Forms Based on Principles of Sustainable Development of Education." *Journal of Higher Education Theory and Practice* 21.14 (2021): 102-111.
- [17] Oh Seh-La, and Hae-young Rieh. "Managing data set in administrative information systems as records." *Journal of Korean Society of Archives and Records Management* 19.2 (2019): 51-76.
- [18] Yongbin H. A. N. "Exploration of precise management system for scientific research projects under new national S & T system—taking administrative offices of CAS as example." *Bulletin of Chinese Academy of Sciences (Chinese Version)* 33.6 (2018): 622-629.
- [19] Yarashovna Rajabova Dilnoza. "The description of administrative system in the emirate of Bukhara during the reign of Said Abdulahadkhan in foreign sources." *International Journal on Integrated Education* 3.4 (2020): 32-35.
- [20] Galanti T, Fantinelli S. Managing the future of talents: digital innovation in learning organizations. *The Learning Organization* 32.4 (2025): 554-580.
- [21] Rayyan M, Sharifah N, Kuswati R. Revolutionizing Talent Acquisition in Indonesia's E-Commerce Industry: The Transformative Impact of AI and Machine Learning. *Journal of Humanities and Social Sciences Studies* 6.4 (2024): 01-12.
- [22] Zhang J, Chen Z. Exploring human resource management digital transformation in the digital age. *Journal of the knowledge economy* 15.1 (2024): 1482-1498.