Original article UDC 332.1

DOI: 10.17213/2075-2067-2023-2-156-169

#### STUDY ON MANAGEMENT SYSTEM OF LIAOCHENG DEVELOPMENT ZONE

Li Wenjun<sup>1⊠</sup>, Evgeniya V. Roshchina<sup>2</sup>, Zhang Chong<sup>3</sup>

1, 2, 3 Southern Federal University, Rostov-on-Don, Russia
1li.wenjun@mail.ru<sup>™</sup>, ORCID: 0000-0002-0623-9616
2evroshina@sfedu, ORCID: 0000-0001-5729-4191, AuthorID RSCI: 607880
31043168992@qq.com, ORCID: 0000-0002-6065-2786

**Abstract.** Research background. The development zone is the necessary foundation for giving full play to resource endowment, attracting investment and economic development, it has gradually become the driving force of the regional economy. Liaocheng Development Zone has been in operation for many years, which has promoted the vigorous development of local economy.

**Research purpose.** In order to solve problems and contradictions in the management system of development and give play to the role of the Liaocheng Development Zone in further under the new situation.

The methodological basis of the study is the provisions of the concepts of economic development and special economic zones. This paper uses literature review method, case study and centering analysis method to review the status of Liaocheng Development Zone and the evolution of management system in detail. And drawing on successful experience at home and abroad, and then puts forward the general idea and some suggestions.

**Results and novelty.** It is necessary to innovate the management system, clarify the target model of the development, strengthen flat and efficient organization and management, improve the management efficiency, and innovate financing methods of the Liaocheng Development Zone.

Keywords: Liaocheng, Development Zone, management system

For citation: Li Wenjun, Roshchina E. V., Zhang Chong. Study on management system of Liaocheng Development Zone // Bulletin of the South Russian State Technical University. Series: Socio-economic Sciences. 2023; 16(2): 156–169. (In Russ.). http://dx.doi.org/10.17213/2075-2067-2023-2-156-169.

<sup>©</sup> Ли Вэньцзюнь, Рощина Е.В., Чжан Чонг, 2023

Научная статья

### ИССЛЕДОВАНИЕ СИСТЕМЫ УПРАВЛЕНИЯ ЗОНОЙ РАЗВИТИЯ ЛЯОЧЭН

Ли Вэньцзюнь<sup>1⊠</sup>, Евгения Валерьевна Рощина<sup>2</sup>, Чжан Чонг<sup>3</sup>

<sup>1,2,3</sup>Южный федеральный университет, Ростов-на-Дону, Россия
<sup>1</sup>li.wenjun@mail.ru<sup>™</sup>, ORCID: 0000-0002-0623-9616
<sup>2</sup>evroshina@sfedu, ORCID: 0000-0001-5729-4191, AuthorID РИНЦ: 607880
<sup>3</sup>1043168992@qq.com, ORCID: 0000-0002-6065-2786

Аннотация. Предпосылки исследования. Зона развития является необходимой основой для полноценного использования ресурсов, привлечения инвестиций и экономического развития, она постепенно становится движущей силой региональной экономики. Зона развития Ляочэн действует уже много лет, что способствует энергичному развитию местной экономики.

**Целью исследования** является определение роли и повышение результативности зоны развития Ляочэн в новой экономической ситуации посредством решения проблем и противоречий в системе управления развитием.

Методологическую базу исследования представляют положения концепций экономического развития и особых экономических зон. В этой статье используется метод литературного обзора, тематический анализ и метод эволюционного анализа для подробного обзора состояния Зоны развития Ляочэн и эволюции системы управления. Опираясь на примеры успешного опыта реализации политики управления зонами в Китае и за рубежом, авторам удалось разработать общую концепцию эффективной системы управления Зоной развития и сформулировать некоторые предложения.

**Результаты и новизна.** Необходимо обновить систему управления, уточнить целевую модель развития, повысить стабильность и эффективность организации и управления, обновить методы финансирования зоны развития Ляочэн.

**Ключевые слова:** Ляочэн, зона развития, система управления

Для цитирования: Ли Вэньцзюнь, Рощина Е.В., Чжан Чонг. Исследование системы управления зоной развития Ляочэн // Вестник Южно-Российского государственного технического университета. Серия: Социально-экономические науки. 2023. Т. 16, № 2. С. 156—169. http://dx.doi.org/10.17213/2075-2067-2023-2-156-169.

#### **I Introduction**

In 1992, there were roughly 2000 development zones in China. The enthusiasm for development zones was overwhelming [1]. Everywhere, they built roads, bridges and houses. It is in such a heat wave of development zone construction tide, On December 12, 1992, Shandong Provincial government approved the establishment of Liaocheng Economic and Technological Development Zone, and it started construction in 1995 [6]. Over the past 30 years, Liaocheng Economic Development Zone has gradually become an important engine for Liaocheng's economic

and social development, a booster for reform and opening up, and an important platform for local economic development. In recent years, the functions of development zones have evolved from land development, park construction and investment attraction to an important way to accelerate the realization of urbanization, an incubator for technological innovation and a service platform for industrial development [9]. With the in-depth advancement of China's reform and opening up, the development of development zones is also facing many new situations and problems, especially the weakening of the original flexible and

efficient management system of development zones, and how to further improve the management system of development zones and promote the healthy and sustainable development of development zones is an important research topic for accelerating the reform and development of development zones in Liaocheng and even all parts of the country at present [18].

#### **II Research Methods**

**Firstly,** this paper uses literature review method to sort out the management system of development zones at home and abroad.

Foreign scholars mostly study the development of development zones from the perspective of economics, and less study the management system. Most of the existing researches on the management system of development zones come from Chinese scholars. In addition, Chinese semesters mainly focus on the analysis and research of big data of management system, and there are few researches on the management system of development zones with specific characteristics.

Chinese scholars study management system of development zones nationwide from a macro perspective, or according to the concentration degree of administrative power in development zones, or according to the different modes of management operation or exercise. For example, administration-oriented management system classification, corporate and mixed management system, and the classification of government-oriented, government-service-oriented and government-enterprise mixed management system, etc. [14].

Most Chinese scholars classify the management system of development zones according to the scope, degree and emphasis of management subjects' participation in the management of development zones, and have obtained some valuable results, which provide ideas for empirical research on the status quo of management system of development zones across the country, but most of them concentrate on qualitative induction. However, there are few researches on the specific development zones. Due to the different conditions in different places, the demonstration results are difficult to use pertinently and lack of practical operation.

**Secondly**, this paper uses case analysis and investigation method to analyze the regional and economic development status of Liaocheng Development Zone in detail.

Liaocheng Development Zone has jurisdiction over seven township sub-district offices: Dongcheng, Jiangguantun, Beicheng, Xuying, Guguantun, Guangping, Hanji, with a total population of nearly 300,000 people and an area of 389.4 square kilometers.

#### (1) Unique strategic location

Liaocheng is located at the border of Hebei, Shandong and Henan provinces. The development zone is located on the east side of Shuicheng and Liaocheng. At present, it has been included in the Central Plains Economic Zone, the provincial capital city cluster Economic circle, the Beijing-Tianjin-Hebei coordinated development zone, comprehensive pilot zone for the transformation of old and new growth drivers in Shandong Province, ushering in an important period of strategic opportunities for reform and development.

### (2) Constant infrastructure investment

Since 1995, the development zone has introduced a number of hospitals, schools, houses, hotels, restaurants and other supporting projects for production and living, so as to facilitate the enterprises entering the zone. In the following years, a cumulative investment of 1 billion yuan, improving supporting facilities for water, electricity, gas, heating and others, basically realized «nine access and one flat». Up to now, the urbanization level of the region has reached 52.8 percent. The total length of urban roads reached 107.6 kilometers, with 4.92 million square meters of green roads. By November 2022, the region's investment in fixed assets had reached 8.899 billion yuan, up 17.7 percent. See the table below

# (3) The main economic indicators are developing well

In recent years, the development zone has overcome the impact of the epidemic. In 2020, the GDP of economic and technological development zones will reach 14.59 billion yuan, an increase of 8.2%; revenue in general public budget was 1.89 billion yuan, an increase of 10.4%; the investment in fixed assets was 8.036 billion yuan; the total output value of designated industrial enterprises reached 26.783 billion yuan, with a year-on-year growth of 6.9%. In 2021, the GDP of high-tech development zones was 13.939 billion yuan, up 13.3 percent year on year. General public budget revenue reached 2.116 billion yuan, up 65.69% year on year;

Table 1 Таблица 1

# Details of fixed asset investment in Liaocheng Development Zone in 2022<sup>1</sup> Подробная информация об инвестициях в основной капитал в зоне развития Ляочэн в 2022 году

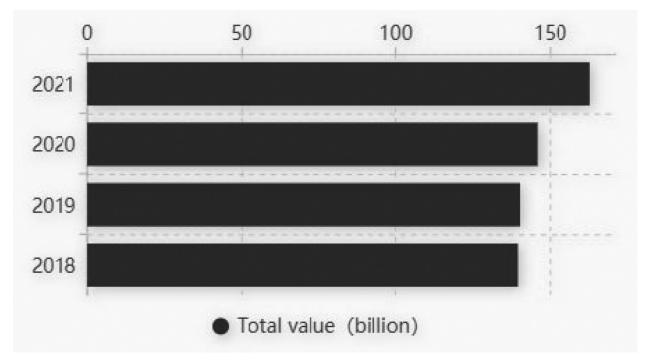
Investment situation	Absolute amount (billion)	Growth rate (%)
Completion of fixed investment	88.99	17,7
Constructional engineering	50,4	25,8
Installation works	11,35	117
Purchase of equipment and appliances	10,69	85,9
Others consumption	16,55	_9
Construction land fee	11,39	48,7
# Real Estate	33,55	18,4

among them, the tax revenue (county-level) accumulated to 1.93 billion yuan, an increase of 82.39%; tax revenue accounted for 91.21 percent of general public budget revenue. The output value of high-tech industries accounted for 93.73% of the total output value of industries above designated size. R&d investment accounted for 7.3% of GDP; the added value

of industrial enterprises above designated size increased by 19.7% year on year.

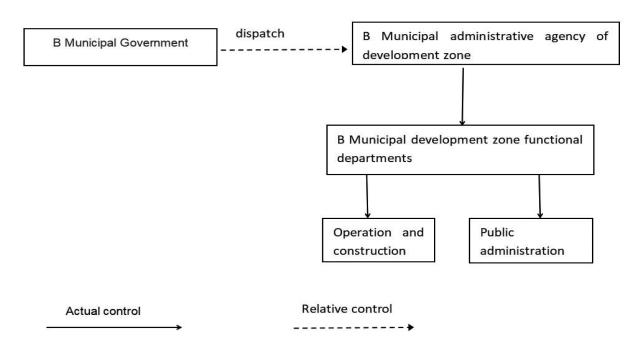
## III Analysis on management system of Liaocheng Development Zone

This part analyzes the status of the management system of Liaocheng Development Zone and its different stages by means of survey meth-

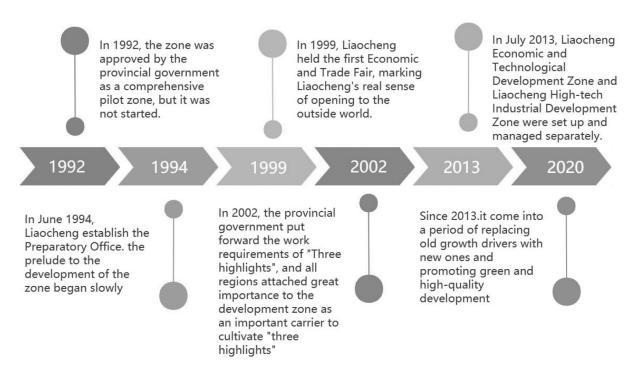


**Fig. 1.** Liaocheng Development Zone 2018–2019GDP<sup>2</sup> **Рис. 1.** ВВП зоны развития Ляочэн в 2018–2019 годах

<sup>1</sup> Source: Compiled by the authors. 2 Source: Compiled by the authors.



**Fig. 2.** Management system map of Liaocheng Development Zone [5] **Рис. 2.** Карта системы управления зоной развития Ляочэн [5]



**Fig. 3.** History of Liaocheng Economic Development Zone<sup>3</sup> **Рис. 3.** История зоны экономического развития Ляочэн

<sup>3</sup> Source: Compiled by the authors.

ods and qualitative analysis, innovatively puts forward the evolution of the management system of the development zone, and finds the problems existing in the current management system of the development zone.

### 3.1 Management system status of Liaocheng Development Zone

Liaocheng Development Zone is a government-oriented management system. According to the power of the administrative committee of the development zone, it can be divided into «vertical coordination» and «centralized management». Liaocheng Development Zone belongs to the «centralized management» management system. The People's Government of Liaocheng has set up a special agency-the Management Committee of Liaocheng Development Zone. The administrative Committee sets up various administrative departments by itself and enjoys the authority of the municipal administrative departments in the city where it is located [5]. The management system chart of Liaocheng Development Zone is as follows:

### 3.2 Management evolution of Liaocheng Development Zone

Based on the development history of Liaocheng Development Zone, combined with the background and theme of policy documents, the development of management system is divided into four stages: longitudinal coordination in the preparation stage, semi-closed in the initial stage and closed in the development stage, and coordinated management system in the two districts in the reform stage.

## 3.2.1 Phase of vertically coo4rdinated management system (1994–1995)

In 1994, Liaocheng decided to set up the Preparatory Office of Liaocheng Comprehensive Pilot Zone for Opening up and Development. The office is headed by the deputy district governor of Liaocheng, with a team of five former civil servants and eight new recruits. The main task is to build a team, determine the direction and plan the development. In nature, for Liaocheng directly under the administrative unit, its function is responsible for coordinating all parties, pooling resources. In terms of development mode, a pilot zone development company should be set up to prepare regional infrastructure.

The characteristic of the management system in the preparation stage is the direct management by the government. The authority of the de-

velopment zone company is limited and its main function is coordination. With the strengthening of the leading group, the idea of development is gradually clear, and increases the administrative authorization of the development zone in the management system.

# 3.2.2 Semi-closed Management System Stage (1995–2002)

In 1995, Liaocheng deployed departmentlevel cadres from county and urban areas to the development zone, established party committees and management committees, determined the scope of the division, and set up relevant functional departments. That is, «Liaocheng Jiangguantun Town and Litaitun Village of Liuyuan office will be put under the jurisdiction of the development zone». The development zone exercises the same functions and powers as the eight counties and cities in Liaocheng. «There are 4 organs: First, the office is responsible for the office of the Party Committee and the management Committee, as well as the supervision of discipline, personnel, labor and mass organization. Second, the Planning and Construction Department, responsible for planning, construction, land management, transportation and environmental protection. Third, the Economic and Trade Development Division, responsible for planning, industry, commerce, statistics, industry and commerce, finance and taxation and investment. Fourth, the rural work office, responsible for agriculture, forestry and water resources, diversified management, rural enterprises, culture, education and health, family planning, civil affairs and social security».

### 3.2.3 Phase of closed Management (2002–2013)

In 2002, Liaocheng issued the Decision on Accelerating the Development of Liaocheng Economic Development Zone, clarifying the status and development goals of the zone. It is clear that «the Party Working Committee and the management Committee of the Development Zone shall be the dispatched organs of the Municipal Party Committee and the municipal government, and shall, on behalf of the Municipal Party Committee and the municipal government, exercise the functions of municipal administration, economic and social affairs management within the jurisdiction». The development zone has set up an office with «unified authority, simplification and efficiency, and

coordinated operation». Implement «small organizations, large services».

#### 3.2.4 Two-zone operation stage (2013–now)

The 21st century development zone has entered a period of deepening reform. In July 2013, Liaocheng Economic and Technological Development Zone and Liaocheng High-tech Industrial Development Zone were set up and managed separately, and the statistical data of the two zones were uniformly reported. So far, Liaocheng Development Zone has responded to the requirements of the state and promoted the deepening reform of the development zone. Liaocheng Development Zone has begun to explore the process of adapting to the new era and zoning operation.

The two districts, with Yellow River Road and East Outer Ring Road as the dividing line, operate independently respectively; and it is independent internally and unified externally, collectively known as Liaocheng Economic and Technological Development Zone or High-tech Development Zone. Among them, Phoenix Industrial Park has been included in the high-tech zone statistical scope. Two districts and one garden shall be reported uniformly by the municipal Bureau.

# 3.3 Existing problems of management system in Liaocheng Development Zone

# 3.3.1 The legal body is lacking and the management system is not standardized enough

The Organic Law of the People's Republic of China on Local People's Congresses and Local People's Governments at various Levels stipulates: «Provinces, autonomous regions, municipalities directly under the central government, autonomous prefectures, counties, autonomous counties, cities, municipal districts, townships, nationality townships and towns shall establish people's congresses and people's governments». Development zones do not belong to the sequence of administrative organs, do not automatically possess subject status of law. The administrative structure of the development zone highlights the lack of subject status of law of the development zone, which greatly affects the standardization and stability of policies. At the same time, the play of public service functions is also limited, which severely hits investors' long-term investment in the development zone.

### 3.3.2 The trend of administrative function is obvious

With the continuous expansion of Liaocheng Development Zone, the work of the management committee is not only economic construction, but also to undertake a large number of administrative functions, such as supporting policies, culture and tourism, public cultural services, agriculture-related subsidies, stable employment, social security, public culture and sports and so on. The double responsibility of economic and social administration makes the management committee extremely heavy, which seriously affects the play of its main functions and restricts the scientific and harmonious.

### 3.3.3 The functional authority of the development zone is not in place

In recent years, China has strengthened the clean-up and reorganization of the development zone, and the administrative bodies of industry and commerce, taxation, technical supervision and planning have been successively placed under vertical leadership. Some of the administrative authority has been collected, and the authority that should be delegated (such as industrial planning and tax administration) is subject to the restriction of departmental policy provisions. At the same time, it has many levels of management and insufficient authorization.

# 3.3.4 The specialization and marketization of asset operation and management is not enough

According to international experience, the asset operation management of development zones should separate public infrastructure from commercial development and implement professional operation. It shall be managed in accordance with the operation mode of a market economy and allow private capital to participate. At present, Liaocheng Development Zone asset operation management institutions lack specialization. The degree of marketization is not high. Some projects do not operate in market-oriented ways such as competitive bidding, resulting in high operating costs, low investment efficiency, and poor management.

### IV Argumentation on the solution of problems in Liaocheng Development Zone

This part is the argumentation section of the article. It reviews the experience of domestic and foreign development zones, analyzes the char-

acteristics of management system and development results of four domestic and foreign development zones in detail, and puts forward several policy suggestions for the problems encountered by Liaocheng Development Zone.

### 4.1 Domestic and foreign development zone management system experience

### 4.1.1 Characteristics of management system of domestic development zones

(1) Bihai new-region

Binhai New Area is located in the eastern coastal area of Tianjin and includes Tanggu District, Hangu District, Dagang District, Development Zone, bonded zone, Tianjin Port and parts of Dongli District and Jinnan District.

Binhai New Area adopts three-level leadership in its management system. The first level is the coordination body, the second is the management committee of the New Area, and the third is the constituent bodies. The leader of the leading group is the Party secretary, and the deputy leader is the municipal leader, who is responsible for the overall planning, research and solution of major problems. The administrative committee is an agency dispatched by the municipal government to exercise the relevant power of construction and management. The district governments and the administrative organs of the economic zones in Binhai New Area shall be responsible for the administrative work of their respective jurisdictions and accept the guidance of the administrative committee members of the New Area.

#### (2) Jinpu New District, Dalian

Jinpu New District belongs to Dalian City of Liaoning Province, covering all the administrative areas of Jinzhou District and part of Plandian District of Dalian City. As the 10th statelevel New District, Jinpu New District is located in the south of Liaodong Peninsula and northeast of Dalian City, with a total area of about 2299 square kilometers [2]. The permanent population is 1,545,491.

In 2020, Jinpu New District will carry out pilot reform, established a new governance model of «new district leadership, three-district coordination», promoted comprehensive, integrated, systematic and reconstructive reform, The original 21 parks will be transformed into three new parks. Its management system has been reformed: First, we will establish a statutory body. We will no longer retain the administrative com-

mittee of the nature of a government agency, and define the administrative committee as a statutory body with the status of a legal person. We will abolish the establishment of administrative services, establish a market-based mechanism, practice enterprise-oriented management, and actively establish a system that respects value, encourages innovation, and rewards outstanding performance. To realize a modern enterprise management system in which cadres can move up and down, employees can move in and out, and salaries can rise and fall. Second, focus on the main responsibility and business. The park will no longer manage the streets, and social management and public service functions within the park will be undertaken by Jinpu New District and the streets. Third, the Administrative examination and Approval Bureau shall be set up to fully delegate power and empower the economic functions of the development zone in accordance with the principle of full release, compile a list of economic powers and responsibilities, and thoroughly stimulate the development vitality of the park [16]. After the reform, the sound business environment of the three parks in Jinpu New Area has formed a huge attraction for capital from home and abroad. Major projects have achieved remarkable results in attracting investment, the trend of characteristic industry agglomeration has gradually formed, the level of talent team construction and service efficiency have been greatly improved, and the functional advantages of the development zone as the main battlefield of economic construction have become more prominent.

# 4.1.2 Characteristics of management system of foreign development zones

(1) Tsukuba Science City

Tsukuba Science City, Japan, is a science and industrial park established by the Japanese government in the 1960s, which is divided into two parts: «Scientific Research Park» and «Surrounding Development Zone». Japan's «Science City of Tsukuba» created a new mode of industrial park management, enjoyed a reputation in the 1980s, and provided a booster for Japan's economic revitalization. In fact, «Tsukuba Science City» in Japan is the product of government planning at the beginning, with a deep imprint of the government [8]. In September 1963, the Capital Planning Commission proposed the basic planning for the Science City. In July 1965,

the Japan Housing Corporation drew up the first master plan for Science City [17]. After receiving opinions from provincial offices, universities and research institutes, the second Science City plan was revised in February 1966. In April 1967, a third planning was introduced. The fourth Master Plan was promulgated in April 1969 [4]. Eventually, it became the size it is now.

The Tsukuba Science City will be coordinated and managed by the «Science City Construction Promotion Headquarters» under the Prime Minister's office, led by the Land and Infrastructure Administration, and composed of vice ministers from the Science and Technology Administration, the Environment Administration, the Health and Welfare Ministry, the Education Ministry, the Agriculture, Forestry and Fisheries Ministry, as well as posts and telecommunications, labor, industry and construction ministries. Under the «Science City Construction Promotion Headquarters», the «Liaison Association of Research Institutions in Tsukuba» is set up to coordinate the work of various parties, and the five specialized committees under it are respectively responsible for the specific management of research services. Specifically, land development and utility construction projects is undertaken by Housing and Urban development groups; The Construction Ministry is responsible for the construction of scientific and educational institutions, while the Tsukuba Science City Development Corporation builds and manages roads, parks and commercial services.

(2) Research Triangle Park, North Carolina In 1956, North Carolina state government, business and university leaders formed the Research Triangle Park Preparatory Committee to explore and prepare for the establishment of a research park between Duke University, North Carolina State University and the University of North Carolina [11]. In 1959, the Research Triangle Park in North Carolina was founded by the leaders of business, academia and industry. It covers an area of about 7,000 acres and is 9.6 kilometers long from north to the south and 3.2 kilometers wide from east to the west [12]. The park is named for its location in the middle of a triangle formed by the vertices of three universities in the city: Duke University in Durham, North Carolina State University in Raleigh, and the University of North Carolina at Chapel Hill [7]. Research Triangle Park in North Carolina closely combines product development in new technologies with university research. Universities conduct scientific research according to the actual needs of the market, and the results of scientific research are quickly transferred to specialized research and development institutions for development, and the new technologies developed are quickly transplanted to enterprises and transformed into high-tech products. This combination not only produces fast results, short development cycle, and are high-tech products, economic benefits are very good.

The Research Triangle Park in North Carolina is managed by the Triangle Foundation, which has a president and four staff members. The foundation is managed by a board of directors consisting of 11 representatives from the government, schools and enterprises. The functions of the management organization under the jurisdiction of the foundation mainly include: formulating and implementing the development plans and related policies of the science and technology industrial parks; to undertake the construction of infrastructure and research facilities; raise funds; setting up business incubators; manage and operate real estate [10]. In daily activities, the Foundation is only responsible for managing and guiding the construction and planning of the Research Triangle Park, and has no right to interfere in the internal affairs of enterprises in the park. The Triangle Foundation sets up a subsidiary company, «Triangle Service Center Co., LTD», Which is responsible for many commercial activities in the park, such as banking, transportation and property rental [3].

# 4.2 Suggestions on management system of Liaocheng Development Zone

# 4.2.1 Define the target mode of development of the development zone

It is suggested that through the formulation and improvement of laws and regulations on development zones, the state should be called upon to promulgate a unified law on economic development zones as soon as possible, and the municipal government should formulate or revise relevant regulations or regulations on development zones as soon as possible, clarify the positioning and objectives of development zones, organizational structure, scope of management functions, authority and responsibility, etc., and maintain the relative stability of the manage-

ment mechanism and functions of development zones. It is necessary to establish development benchmarks and clarify directions, accelerate the transformation of development zones into connotative development, and pay attention to promoting industrial development planning, enterprise policy demand research and technological innovation platform construction.

# 4.2.2 Strengthen flat and efficient organizational management

It is recommended implementing the development-management-service integrated development model of the organizational structure of «leading group + management committee + development company», and the leading group should be highly equipped to ensure that the organization and coordination of development and construction promotion work is strong; the management committee should be fully authorized to give play to its role in park development, industrial planning, management services, etc., and appropriately give it the functions of overall planning, functional integration and industrial layout of surrounding streets and towns, and at the same time adapt to the development situation, strengthen the professional function of the management committee, and weaken the functions of administrative examination and approval and infrastructure construction. Development companies should make more use of market mechanisms in regional development and construction, investment attraction and supporting services [13].

# 4.2.3 Innovate the management system of Liaocheng Development Zone

Take institutional innovation as the key innovation, process reengineering as the fundamental measure to promote institutional innovation, and vigorously eliminate the pain, difficulty and blockage in decision-making, management and service with reform ideas and innovative methods. Build a process reengineering «1+N» system of continuous optimization, dynamic adjustment and iterative updating [15]. To promote the intensification, precision, platform and digitalization of the overall process. First, we will continue to streamline administration and delegate power. Accelerate the promotion of «equal rights between cities and counties»; do a good job of directional empowerment and undertaking work; we will standardize the exercise of administrative power. Second, we will push forward the reform of «handling cases at one window and handling them well at one time». We will deepen the reform of «accepting cases at one window» without discrimination in all fields. Reengineering the process to achieve «once done well»; we will promote the hand-held handling of key and frequent issues related to people's livelihood. We will build a new model of differentiated regulation.

### 4.2.4 Improve management efficiency in the development zone

First, reengineering the internal process of the department. The internal process of the department was reconstructed flatly, and the decision execution of related affairs was reduced from 5 levels (mainly responsible comrades responsible comrades — section chief — deputy section chief — general staff) to 2 levels (top leaders — all staff). Secondly, reengineering the process between departments. Carry out collaborative reengineering of the process between horizontal departments, break through the barriers of inter-departmental communication, coordination, cooperation, etc., and realize that the proportion of inter-departmental matters «done well at one time» is more than 70%; the duration of consultation between departments shall be reduced to 1 working day, and the duration of countersigning documents shall be reduced to less than 3 working days. Then, for matters involving multiple departments, we will implement who is in charge, who takes the lead and who is responsible. Finally, reengineering the open and transparent decision-making process of the department. Finally, it establishes an open mechanism for the implementation of decisions, implements a public defense and hearing system for decision-making matters, invites «two representatives and one committee member», entrepreneurs, experts and scholars and other people from all walks of life to participate in the defense and hearing of relevant policies and measures, and general matters can be conducted for their own departments.

### 4.2.5 Innovate financing models for development zone

One is to invest in the operation of the development zone construction. In accordance with the requirements of establishing a modern enterprise system, development zones are encouraged to speed up the establishment of a number of investment companies, which participates in land acquisition and storage and primary land development, and develop and construct in a market-oriented way. Second, we encourage the development and construction of professional investment and entrust the third party with professional investment. Third, we will encourage development and construction through jointstock cooperation. The development zone shall establish a joint venture company with a third party to delimit and build the park in the development zone. The joint venture company shall be responsible for the planning, investment development, investment attraction, operation and management of the park, and the income shall be divided according to the proportion of the share capital of both parties. Fourth, we will expand other financing channels. Encourage BT, PPP and other ways to introduce social capital investment in infrastructure, standard factories, professional markets, storage facilities and other projects. Fifth, introduce financing intermediary actively, expand the financing, inject more funds into the development zone.

#### **V** Conclusion

In conclusion, our country's development zone has made significant contribution to the regional economic development since the development of nearly 40 years. Through a detailed analysis of the past and management system of Liaocheng Development Zone, this paper uses case study method and qualitative analysis method to make an innovative analysis of the development and management system, and divides the stage of the management system into four periods: First, phase of vertically coordinated management system (1994–1995). Second, semi-closed management system stage (1995–2002). Third, phase of closed management (2002–2013). Fourth, two-zone operation stage (2013-now).

At the same time, the main body of the management system is not standardized, the function is administrative, the authority is not in place and other problems have been exposed in the reform and development of Liaocheng Economic Development Zone. Through the analysis of the existing literature on the management system of development zones at home and abroad, summarize the advantages and disadvantages of each development zone, and bring experience to the innovation and reform of the management system of Liaocheng Economic Development Zone.

Finally, the author gives several suggestions for the management system reform of Liaocheng Development Zone, such as clarifying the target mode, strengthening the flat and efficient organization management, innovating the financing mode, etc. When studying the management system of development zone, the author finds that various types of development zone have a distinct hierarchy, and there are great differences in its management system and effect. Scholars have studied and taught more about the management system of national development zones, but less about the management system of provincial and municipal levels.

#### References

- 1. Changfu M. Thinking caused by «Development zone Fever» // Enterprise Vitality. 1993. №02. P. 24.
- 2. Decision of the People's Government of Liaoning Province on Granting a batch of Provincial administrative powers to the Management Committee of Dalian Jinpu New Area and the Management Committee of Dalian High-Tech Industrial Park // Bulletin of Liaoning Provincial People's Government. 2018. №22. P. 2–7.
- 3. Fan D. Comparative Study on Management Mode of World High-tech Industrial Development Zones // Science of Science and Management of Science and Technology. 2003. Iss. 3. P. 39–42.
- 4. Fujiwara K., Deng Y. Japan: Tsukuba Science City // Beijing Planning and Construction. 2005. №1. P. 74–75.
- 5. Lei X. On Problems of Management System in Chinese Development Zone. Doctoral Thesis of Shandong University. Shandong: Shandong University, 2009.
- 6. Liaocheng District Administration Office of Liaocheng District of the Communist Party of China on Liaocheng Economic and Technological Development Zone. Reply to Urgent Problems to be solved in the Initial Stage [Electronic resource] // Chat and issue. 1995. №26. URL: http://www.lckfq.gov.cn/kfqxxgk/? ClassInfold=6614 (date accessed: 20.12.2022).
- 7. Link A. N. Generosity of Spirit: The Early History of the Research Triangle Park Research. Durham: Research Triangle Foundation, 1995. 149 p.

- 8. Liu H. Japanese Science and Industrial Parks and Their Characteristics // Technical Economics and Management Research. 2000. №6. P. 70.
- 9. Lu F. Notice of Coordination Group of Foreign Economic Work of Shandong Provincial People's Government on the Master Plan of «Zoning and Distributing» for the Development of Export-Oriented Economy of Shandong Province» // Foreign Cooperative Group. 2009. №92. P. 11.
- 10. Luger M.L. Does North Carolina's High-Tech Development Program Work? // Journal of the American Planning Association. 1984. Vol. 50. P. 280–289.
- 11. North Carolina Department of Commerce [Electronic resource]. URL: https://www.nccommerce.com/ (date accessed: 15.01.2023).
- 12. Rogers E.M. The Role of the Research University in the Spin-Off of High-Technology Companies // Technovation. 1986. Vol. 4. Iss. 3. P. 169–181.
- 13. Wei Z. Reflection on the Management System of Development Zone // Science and Technology Information. 2007. №16. P. 36.
- 14. Yang Y. Practice and Exploration of Management System Innovation in Shanghai Development Zone // Science Development. 2009. №10. P. 25.
- 15. Zhang Z. Management System of Domestic Development Zone: Difficulties and Innovation // Economic Question Exploration. 2009. №4. P. 103–105.
- 16. Zheng H. A series report on Ten Parks in Jinzhou New District // Dalian Daily. 2011. October 11.
- 17. Zhong J. Analysis on the Development Mode of Tsukuba Science City // Economic Frontier. 2001. №9. P. 31–34.
- 18. Zhu Y., Liu B., et al. The Organization Management System and Reform of Local Administrative Institutions in China's Economic Development Zone. Tianjin: Tianjin People's 1 Publishing House, 2001.

#### Список источников

- 1. Changfu M. Thinking caused by «Development zone Fever» // Enterprise Vitality. 1993. №02. P. 24.
- 2. Decision of the People's Government of Liaoning Province on Granting a batch of Pro-

- vincial administrative powers to the Management Committee of Dalian Jinpu New Area and the Management Committee of Dalian High-Tech Industrial Park // Bulletin of Liaoning Provincial People's Government. 2018. №22. P. 2–7.
- 3. Fan D. Comparative Study on Management Mode of World High-tech Industrial Development Zones // Science of Science and Management of Science and Technology. 2003. Iss. 3. P. 39–42.
- 4. Fujiwara K., Deng Y. Japan: Tsukuba Science City // Beijing Planning and Construction. 2005. №1. P. 74–75.
- 5. Lei X. On Problems of Management System in Chinese Development Zone. Doctoral Thesis of Shandong University. Shandong: Shandong University, 2009.
- 6. Liaocheng District Administration Office of Liaocheng District of the Communist Party of China on Liaocheng Economic and Technological Development Zone. Reply to Urgent Problems to be solved in the Initial Stage [Electronic resource] // Chat and issue. 1995. №26. URL: http://www.lckfq.gov.cn/kfqxxgk/? ClassInfoId=6614 (date accessed: 20.12.2022).
- 7. Link A. N. Generosity of Spirit: The Early History of the Research Triangle Park Research. Durham: Research Triangle Foundation, 1995. 149 p.
- 8. Liu H. Japanese Science and Industrial Parks and Their Characteristics // Technical Economics and Management Research. 2000. №6. P. 70.
- 9. Lu F. Notice of Coordination Group of Foreign Economic Work of Shandong Provincial People's Government on the Master Plan of «Zoning and Distributing» for the Development of Export-Oriented Economy of Shandong Province» // Foreign Cooperative Group. 2009. №92. P 11
- 10. Luger M.L. Does North Carolina's High-Tech Development Program Work? // Journal of the American Planning Association. 1984. Vol. 50. P. 280–289.
- 11. North Carolina Department of Commerce [Electronic resource]. URL: https://www.nccommerce.com/ (date accessed: 15.01.2023).
- 12. Rogers E.M. The Role of the Research University in the Spin-Off of High-Technology Companies // Technovation. 1986. Vol. 4. Iss. 3. P. 169–181.

- 13. Wei Z. Reflection on the Management System of Development Zone // Science and Technology Information. 2007. №16. P. 36.
- 14. Yang Y. Practice and Exploration of Management System Innovation in Shanghai Development Zone // Science Development. 2009. №10. P. 25.
- 15. Zhang Z. Management System of Domestic Development Zone: Difficulties and Innovation // Economic Question Exploration. 2009. №4. P. 103–105.
- 16. Zheng H. A series report on Ten Parks in Jinzhou New District // Dalian Daily. 2011. October 11.
- 17. Zhong J. Analysis on the Development Mode of Tsukuba Science City // Economic Frontier. 2001. №9. P. 31–34.
- 18. Zhu Y., Liu B., et al. The Organization Management System and Reform of Local Administrative Institutions in China's Economic Development Zone. Tianjin: Tianjin People's 1 Publishing House, 2001.

Статья поступила в редакцию 02.03.2023; одобрена после рецензирования 21.03.2023; принята к публикации 15.04.2023.

The article was submitted on 02.03.2023; approved after reviewing on 21.03.2023; accepted for publication on 15.04.2023.

#### ИНФОРМАЦИЯ ОБ АВТОРАХ



**Ли Вэньцзюнь** — аспирант Факультета управления, Южный федеральный университет.

Россия, г. Ростов-на-Дону, ул. Большая Садовая, 105/42

**Li Wenjun** — doctoral candidate of the Faculty of Management, Southern Federal university.

150/42 Bolshaya Sadovaya str., Rostov-on-Don, Russia



**Рощина Евгения Валерьевна** — кандидат экономических наук, доцент кафедры «Инновационный и международный менеджмент», Южный федеральный университет.

Россия, г. Ростов-на-Дону, ул. Большая Садовая, 105/42

**Evgeniya V. Roshchina** — Candidate of Economic Sciences, Associate Professor of «Innovation and international management» Chair, Southern Federal university.

150/42 Bolshaya Sadovaya str., Rostov-on-Don, Russia



**Чжан Чонг** — аспирант Факультета управления, Южный федеральный университет.

Россия, г. Ростов-на-Дону, ул. Большая Садовая, 105/42

**Zhang Chong** — doctoral candidate of the Faculty of Management, Southern Federal university.

150/42 Bolshaya Sadovaya str., Rostov-on-Don, Russia

### Contribution of the authors:

Li Wenjun — research concept; development of methodology; writing the source text; final conclusions.

Evgeniya V. Roshchina — scientific management.

Zhang Chong — participation in development of curricula and their implementation; follow-on version of the text; final conclusions.

### Вклад авторов:

Ли Вэньцзюнь — концепция исследования; развитие методологии; написание исходного текста; итоговые выводы.

Рощина Евгения Валерьевна — научное руководство.

Чжан Чонг — доработка текста; итоговые выводы.