Research on the text of talent policy in Shandong Province from the perspective of "content-process"

Wei Liang[a], Yongchang Yu[b], Chen Lv[c,*]

Taishan University, Tai'an, Shandong, 271000, China
[a]xiaosi-5210@163.com,[b]yyc6335@163.com,[c]lvchencd@163.com
[*]Corresponding author

Abstract: *The development of the talents is of high value, sustainable and difficult to compete, so it can raise the competitive threshold of a country or region, and then form the core competitiveness. Talent policy is the norm and action criterion for the government to manage and regulate talent resources. Through the formulation and implementation of talent policy, it can create a talent team with reasonable layout, large scale, good quality and optimized structure, thus forming a talent competitive advantage. In response to the strategy of strengthening the country with talents, Shandong Province has formulated a series of talents policies in order to build Shandong's industrial advantages and development advantages through talent construction. To study the text of talent policy of Shandong Province and find out the shortcomings and shortcomings of the talent policy of Shandong Province will help Shandong Province government to increase its strengths and make up for its weaknesses, formulating and perfect public policies more scientifically.*

Keywords: "content-process", talent policy, text research

1. Introduction

At present, China's economy has shifted from a stage of rapid growth to a stage of high-quality development. Under the requirements of high-quality development, if we want to truly form scientific and technological advantages and industrial advantages, we have to rely on talents. Su Rong et al. studied national and provincial science and technology talent policies and found that East China has a strong demand for talents. From October 2017 to August 2018, the newly introduced talent policies in East China accounted for 35% of the country, among which Shandong province was the most prominent, and the newly introduced talent policies accounted for 39% of the seven provinces and cities in East China [1]. However, the text analysis of talent policy in Shandong Province is relatively few.

This paper adopts the policy text analysis method, takes the typical talent policy of Shandong Province from 2013 to 2024 as the research sample, constructs the "content-process" composite dimension analysis framework. We summarize the characteristics and achievements of talent policy of Shandong Province in different stages, analyze the existing problems, and put forward countermeasures and suggestions that are in line with the actual talent policy of Shandong Province.

According to McPherson E.G. (2009), talent development policies are a series of action plans or codes of conduct formulated by government departments to achieve certain economic and social development goals and affect the process of talent development [2]. Abdullah & Rose (2007) believed that the key to the development of scientific and technological innovative talents is to cultivate creativity and innovation [3]. William S. Harvey (2014) believes that from the perspective of global talent policy, non-economic factors should be paid attention to to create effective talent attraction and incentive policies [4]. Xie Jialong et al. (2019) analyzed the effect of the talent policy in the national independent innovation demonstration zones, found that the personnel structure needed to be optimized, and put forward suggestions from the aspects of unifying the policy framework and improving the tool system [5]. At present, the academic circle mainly adopts the method of text analysis in the research of regional talent policy. For example, Liu Yuan and Wu Fengbing (2012) believe that the content of talent policy can be summarized into three aspects: talent introduction, talent training and talent incentive [6]. Liu Zhongyan et al. took national talent policy from 1978 to 2017 as research data and major events as time nodes to conduct content analysis on the historical trajectory, document main body, phased policy key points and policy tools of talent policy evolution [7]. Liu Zuopu et al. took the talent policies issued by the state since the 19th National Congress of the Communist Party of China as research samples, and analyzed the national and provincial science

and technology talent policies from five perspectives: promulgation subject, regional distribution, promulgation time, policy category and strategic standpoint [8].

2. Research sample and analysis framework

2.1 Selection of policy samples

According to the research needs, we arrange the talent policy of Shandong Province by the method of policy analysis, and make a comparative analysis of its policy texts. The policy text of this paper covers the provincial policy documents from 2013 to 2024, including the implementation rules and other policy documents formulated by Shandong Provincial Party Committee and provincial government, Shandong Provincial Human Resources and Social Security Department, Shandong Provincial Science and Technology Department, Shandong Provincial Education Department, etc. Second, the policies chosen should be authoritative. The policy samples selected in this paper are obtained from open Internet channels. The above-mentioned official websites of Shandong Provincial government and relevant departments are used as the core retrieval platform, and the policy retrieval is carried out by relying on the modules of "Policies and regulations" and "Notices and announcements" of the websites. In the search process, the title, issuing authority and issuing time of the documents are complete and clear.

This paper takes the talent policy of Shandong Province from 2013 to 2024 as the research object. We use the official websites of government and relevant departments to collect policy documents. In this paper, the keywords "talent", "introduction", "incentive", "social security", "assessment", "exchange" and "treatment" were used to conduct full-text search, and 97 talent policies were initially collected. Finally, the text of these policies was read and screened one by one, and the samples with low content relevance were eliminated. Finally, 80 valid samples were sorted out.

In this paper, the policy documents of "number-promulgation time-policy name-issuing unit" are sorted out and coded according to "number-policy number" to form a talent policy text database of Shandong Province. See Table 1 for the relevant policy texts on talents in Shandong Province. This paper does not show all the policy texts, the rest of the talent policy is in the appendix.

Table 1: Shandong Province Talent Policy Text

Serial Number	Policy Title	File number	Serial code
1	Opinions on supporting overseas students to start their own businesses in Shandong	[2013] 2 issued from General Office of Shandong Provincial Party Committee General Office of Shandong Provincial People's Government	1-1
2	Opinions on Qilu cultural master project implementation	[2013] 28 issued from General Office of Shandong Provincial Committee of CPC	1-2
3	Administrative Measures for engineering laboratories of Shandong Province	[2013] 1373 issued from Shandong Development and Reform Commission	1-3
4	*Opinions on strengthening talent support for the western economic uplift belt and the key areas of provincial poverty alleviation and development*	[2014] 49 issued from Organization Department of Shandong Provincial Party Committee	2-1
5	Notice on *Opinions on further improving and upgrading the Taishan Scholars project* and *Opinions on the implementation of Taishan Industry Leading Talents Project*	[2014] 36 issued from General Office of Shandong Provincial Party Committee General Office of Shandong Provincial People's Government	2-2
6	Qilu chief technician selection management measures	[2015] 233 issued from General Office of Shandong Provincial People's Government	3-1
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79	Notice on Issuing a circular on several measures to strengthen scientific and technological fiscal and financial cooperation to serve the innovation and development of enterprises	[2023] 155 issued from General Office of Shandong Provincial People's Government	10-8
80	Notice on printing and distributing the Development plan of the aerospace industry of Shandong Province	[2024] 12 issue from General Office of Shandong Provincial People's Government	11-1

2.2 The construction of policy analysis framework

There are few researches on talent policy in Shandong Province. This paper constructs a two-dimensional analysis framework, taking health care, service, incentive and development policy tools as the X-dimension of policy analysis, that is, the basic policy tool dimension.

Health care policy tools meet the basic needs of talents. It provides perfect social medical security for talents, attracts talents through tax incentives, provides housing subsidies, house purchase subsidies, relaxes the conditions for settling down, and formulates perfect policies to solve the follow-up education of talents and the education of children. Service-oriented policy tools strengthen capital investment and infrastructure construction in crowd gathering areas, ensure the personal safety of talents and basic property safety, adhere to the people-oriented, provide excellent public services, and create a good working environment. The incentive policy tool provides an excellent environment for the growth of talents, conducts regular assessment, provides property rights protection for the creative achievements of talents, provides honors for outstanding talents, and constantly encourages talents to break through themselves. Developmental policy tools meet the long-term development needs of talents in the local area. Through job training, special lectures and other means, they provide a long-term exchange platform for talents, provide sufficient development space and promotion channels, meet the needs of talents at the highest level, and create a sense of identity and belonging to the city where they work.

In this paper, talent training, talent introduction, talent incentive, talent retention as the process of talent management Y dimension. The complete chain of talent policy implementation is to cultivate college students to become talents, introduce external talents, motivate talents to release their value to the maximum extent, and leave talents for local long-term use. Based on the existing talent policy analysis model, this paper constructs a two-dimensional analysis framework of "content - process".

3. Policy text analysis

3.1 Analysis of the form of talent policy promulgation

According to the statistics and analysis of the subject words of 80 policy texts, from 2013 to 2024, the talent policy of Shandong Province appeared in various forms of promulgation, such as opinions, some measures, development plans, management methods, implementation opinions, implementation rules and so on. To summarize and summarize these languages, the literature of talent policy in Shandong Province is divided into five categories, such as opinions (including implementation opinions), development planning, management methods (including implementation methods, implementation plans, implementation rules), several measures, and notices, and the number of corresponding languages is analyzed. (Table 2)

Table 2: Shandong Province talent policy text type

Type / Area	Opinions	Development planning	Regulation	Several measures	Notice
Shandong Province	21	4	27	7	21

Statistics show (see Table 3-4) that "management measures" occupy an important proportion in the talent policy promulgated by Shandong Province, accounting for 33.8%; Followed by "opinion" and "notice", it accounts for 26.3% and 26.3% respectively; Other types of policy texts are lacking.

The text form of talent policy in Shandong Province is "management measures". The "management method" emphasizes the criteria required in the implementation process of the method-type policy, which indicates that there are more specific supporting measures for talent policy in Shandong Province. The proportion of "development planning" policy indicates that Chengdu's cultural and creative talent policy pays attention to strategy and planning. The "guidance" policy emphasizes the policy of guiding rules and regulations. This shows that the form of talent policy promulgation in Shandong Province is relatively balanced, paying attention to both strategy and planning, but also paying attention to the implementation details and effects of the policy. At the same time, the talent policy of Shandong Province has few "regulations" type policies, which indicates that the legal level is not high.

3.2 Text analysis of talent policy in Shandong Province based on policy tools

3.2.1 X-dimension analysis of talent policy in Shandong Province

(1) Health care talent policy tool

The health care talent policy meets the basic needs of talents, such as providing housing subsidies, medical security, and visa documents for innovative talents. According to the statistical results, the number of health care policy tools adopted in Shandong Province is relatively balanced, accounting for 27.18%. The most used policy tools include housing security, children's education, life security and tax incentives. The policy tool with the highest usage rate is housing security, accounting for 21.43%, and the second highest usage rate is children's security. We need to concentrate more resources to provide convenient conditions for the children of talents to study. In terms of children's education, the talent policy tools are detailed and detailed, and there are special policy provisions for the children of talents at home and abroad from primary school to junior high school; Secondly, the talent policy of Shandong Province pays attention to the needs of talents in medical treatment and life, and constantly improves policy tools in the aspects of serious illness medical treatment, free physical examination, salary subsidies, and social insurance.

Table 3: Shandong Province talent policy health care talent policy tool

	Name of policy instrument	Number of use	Proportion %
Health care talent policy tool	Housing security	18	21.43
	Immigration facilitation	4	4.76
	Medical security	14	16.67
	Children's education	16	19.05
	Living security	12	14.29
	Tax preference	11	13.10
	Settlement arrangement	2	2.38
	Spousal placement	7	8.33
	Total	84	100
Tool amount	309 (27.18%)		

(2) Service talent policy tool

The service-oriented talent policy integrates resources and builds a service system that integrates publicity, service and management. Creating a good atmosphere and environment for talents, providing them with financial support, platform construction, infrastructure construction, and setting up special work Windows and green channels to serve them are the embodiment of building a service-oriented government or transforming to a service-oriented government. Shandong Province pays more attention to service-oriented policy tools. Among the four policy tools, the use of service-oriented policy tools is more balanced, accounting for 24.92%.

Table 4: Shandong Province talent policy service talent policy tool

	Name of policy instrument	Number of use	Proportion %
Service talent policy tool	Information	4	5.19
	Public service	9	11.69
	Infrastructure	17	22.08
	Platform construction	16	20.78
	Service window	1	1.3
	Atmosphere creation	5	6.49
	Environmental optimization	8	10.39
	Green channel	4	5.19
	Financial support	13	16.88
	Total	77	100
Tool amount	309 (24.92%)		

In the use of policy tools for service-oriented innovative talents, infrastructure construction, platform construction and financial support are mentioned more frequently, and the proportion of infrastructure-related policies in Shandong Province is 22.08%. Infrastructure construction such as innovation laboratory is vigorously promoted, and infrastructure construction accelerates the gathering of talents and gives play to the driving role of talents. The second is the platform construction, accounting for 20.78%, the use of the Internet + talent service model to provide services, constantly improve the online

learning platform, innovation and entrepreneurship platform, the establishment of innovation and entrepreneurship mentor talent database, to provide a broad and professional service platform for innovative talents. Government financial support is also the focus of talent management, and the policy tools supported by financial support account for 16.88%. We need to constantly improve the fund investment mechanism, take government funds as the leading role, introduce enterprise and social funds to increase capital investment in innovative talents, and support innovative talents who meet the requirements. Universities that cultivate innovative talents and enterprises that meet the requirements of innovation and entrepreneurship continue to increase funds, and establish a scientific and reasonable financial support system for innovative talents.

(3) Motivational talent policy tool

Incentive talent policy focuses on the use of various means to motivate talents, and constantly encourage talents to achieve output benefits. To be specific, we materially provide incentives, project rewards and special funds for talents, protect the intellectual property rights of talents and transformation results, issue various honorary titles for talents for spiritual commendation, create a dynamic exit mechanism, regularly evaluate the performance of talents, and bring spiritual motivation and work enthusiasm for talents.

The incentive talent policy of Shandong Province is relatively low, accounting for 22.33%. The incentive talent policy tools of Shandong Province pay the most attention to material rewards, and the most used are rewards and subsidies for talents and innovative and entrepreneurial enterprises. For example, for units undertaking major national science and technology projects and key research and development plans, the provincial finance will reward research and development teams by 3-5% of the actual state funds allocated for the project in the previous year, with a maximum of 600,000 yuan for each project. The maximum reward of each unit is 4 million yuan; For the first completed unit that won the first and second prizes of national natural science, technological invention, and scientific and technological progress projects, the provincial finance will give a one-time reward of 5 million yuan for the first prize and 1 million yuan for the second prize. 70% of the reward funds will be used for scientific and technological research and development and achievement transformation of the unit, and 30% will be awarded to the main completed person (research team); To win the national science and technology progress special award to take the "one event, one discussion" is a way to be rewarded.

Furthermore, there are more policies on performance evaluation and project funding, accounting for 21.74% and 18.84% respectively, while there are fewer policies on the dynamic exit mechanism of talents and property rights protection. (Table 5)

Table 5: Shandong Province talent policy incentive talent policy tool

	Name of policy instrument	Number of use	Proportion %
Motivational talent policy tool	Special fund	6	8.70
	Performance evaluation	15	21.74
	Dynamic exit mechanism	2	2.53
	Achievement transformation	8	11.59
	Incentive and subsidy	18	26.09
	Title of honour	5	7.25
	Project funding	13	18.84
	Property rights protection	2	2.90
	Total	69	100
Tool amount	309 (22.33%)		

(4) Developmental talent policy tool

Developmental policy tools focus on the long-term development of talents, provide sufficient development space and promotion channels for talents, meet the needs of talents at the highest level, and create a sense of identity and belonging to the city where they work. Shandong Province pays more attention to the long-term development of innovative talents, and the proportion of development-oriented policy tools is 25.57%.

Development policy tools mainly include two aspects: one is to provide effective development channels for talents in the process of education and cultivation of talents, especially in the process of college education; the other is to provide sufficient support for talents, provide long-term training and exchange in the work of talents, and help innovative talents develop for a long time.

Shandong Province provided more policy support in terms of training exchange, accounting for 27.85%, followed by policy support in terms of talent cultivation, accounting for 18.99%. Shandong is also focusing on providing more financial support for talent. (Table 6)

Table 6: Shandong Province talent policy development talent policy tool

	Name of policy instrument	Number of use	Proportion %
Developmental talent policy tool	Integration of production and education	7	8.86
	Talent cultivation	15	18.99
	Talent identification	8	10.13
	Start-up grant	6	7.59
	Training exchange	22	27.85
	Cooperation between school and enterprise	5	6.33
	Professional title evaluation	4	5.06
	Financial support	12	15.19
	Total	79	
Tool amount	309 (25.57%)		

3.2.2 Y-dimension analysis of talent policy in Shandong Province

The implementation process of talent policy is also the process of talent management. Talent policy tools are integrated into the four links of talent cultivation, introduction, incentive and retention. In order to better show the complete talent policy chain, this section studies the distribution of talent policy tools in the four aspects of cultivation, introduction, incentive and retention in Shandong Province. (Figure 1)
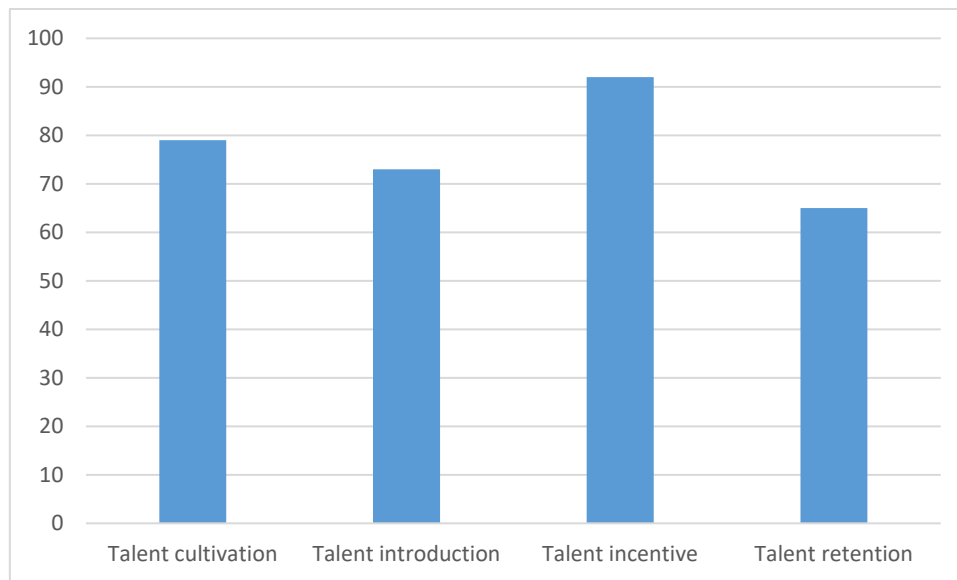

Figure 1: Talent management process distribution of Shandong Province

In the distribution of talent management process, Shandong Province provides more balanced policy support for cultivation, introduction, incentive and retention. Among them, the most importance is attached to talent incentive, and there are 92 related policies, accounting for 29.77% in 309 analysis units. It also invested a lot in talent cultivation, and there were 79 policies related to it, accounting for 25.57%. There are 73 policies related to talent introduction, accounting for 23.62%, while there are 65 policies related to talent retention, accounting for 21.04%. The talent policy of Shandong Province attaches great importance to incentive and cultivation, but tourism is lacking in talent retention.

4. Policy analysis and suggestions

4.1 Analysis of talent policy in Shandong Province under the "content-process" model

Shandong Province attaches great importance to talent cultivation. In the process of talent cultivation, the proportion of health policy tools and development policy tools is the largest, and health policy tools

are mainly distributed in housing security, spouse placement and children's education. Secondly, it is a development-oriented policy tool, focusing on the training and exchange of talents, holding training and exchange meetings for many times, focusing on the cultivation of innovative talents by means of school-enterprise cooperation and the integration of industry and education, and guiding colleges and universities to adjust professional settings and teaching contents in connection with the current situation of industrial development and market needs. But the cultivation of talents in Shandong Province is more material, lacking of service support and incentive for innovative talents.

In terms of talent introduction, Shandong Province has too few policy analysis units, pays attention to the use of security policy tools and service policy tools, lacks attention to talent incentive and development, and has the characteristics of one-time talent introduction. Health policy tools focus on providing talents with housing security, children's education, settlement arrangements in several aspects, of which the most support talent in housing security, such as providing talent supporting housing, apartment rental and other services for innovative talents, and constantly improving the introduction of talent purchase policy. In terms of service-oriented policy tools, financial support is still the main one. In order to introduce talents, Shandong Province also strengthens the level of public services, provides green channels for talents to seek medical treatment and their children to enroll in school, and provides convenience for talents in all aspects of life.

Shandong Province pays the most attention to talent incentive and uses the most incentive policy tools in talent incentive. Shandong Province mainly adopts the form of rewards and subsidies, pays attention to the establishment and improvement of the performance evaluation system, establishes a diversified assessment and evaluation mechanism, encourages various industries to carry out talent evaluation, and inspires talents with honorary titles and awards. We need to increase incentives for individuals or teams that deliver results. The second is service-oriented policy tools, mainly infrastructure, and a small number of development policy tools and health care policy tools. In general, the talent incentive in Shandong Province is relatively scientific, and the main function is management and functional tools, rather than simple material incentives.

In terms of talent retention, Shandong Province mainly adopts health care policy tools and service policy tools, and the distribution of policy tools is similar in the process of talent introduction, focusing on material talent introduction and material talent retention. The most frequently used health care policy tools are still housing security, children's education and spouse placement. In terms of service-oriented policy tools, Shandong Province has opened a green channel for professional title evaluation of talents. However, in the process of talent retention, there is still a lack of incentives for innovative talents and a lack of attention to the long-term development of innovative talents. In the absence of development-oriented policy tools, there may be a brain drain in the future.

4.2 Shandong Province talent policy suggestions

4.2.1 Improved policy tools

(1) Balanced policy distribution and optimized tool mix

In terms of talent introduction, attention should be paid to the combination of a variety of policy tools, while providing talent settlement arrangements and medical insurance, corresponding service-oriented policy tools should be supported. The work process should be simplified, and the reform of "running once at most" should be carried out. After talent introduction, a reasonable number of incentive and development policy tools should be applied to supervise, evaluate and follow-up innovative talents. All localities should balance the application of the four policy tools to provide a more complete and scientific policy system for innovative talents.

(2) Completing the service mechanism, and making good use of talent

It is necessary to establish a service responsibility list and a power list for innovative talents, build a one-stop service platform for innovative talents, and improve the service quality of innovative talents. It should also refer to the practice of the United States and the United Kingdom, and support or introduce overseas innovative talent search agencies, high-end human resources service agencies and consulting companies.

4.2.2 Policy coordination promotion

(1) Improving the cultivation mode and innovating the introduction of intelligence

In order to alleviate the phenomenon of one-time talent recruitment, it is necessary to build a

collaborative mechanism of nurturing, introducing and flowing innovative talents. It is necessary to expand the channels for attracting innovative talents, establish talent gathering conferences or activities with regional characteristics, and accurately attract needed talents. We need to explore the flexible talent introduction mechanism, from the traditional introduction of innovative talents to the introduction of innovative teams or innovative projects, and correctly view the long-term development and flow of innovative talents.

(2) Exploring incentive means to save talent resources

We need to create a social innovation environment, pay attention to the construction of the environment for the development of innovative talents, pay attention to the realization of the value of innovative talents and the long-term development of talents, enhance the regional identity of talents, and accept the reasonable flow of talents. It is also necessary to improve the financial service system, improve financing and insurance models, and create a good financial environment for innovative and entrepreneurial talents.

4.2.3 Improving policy layout

We need to give full play to the decisive role of the market in the allocation of human resources, the government strengthens investment in scientific and technological innovation, supports enterprises to independently train and introduce innovative talents through financial support, allows enterprises to include the cultivation cost of innovative talents into business costs, allows pre-tax deduction, and gives tax incentives. While providing enterprises with financial support policies that meet the life cycle, we need to reduce the control of innovative and entrepreneurial enterprises.

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