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Research on Innovation-driven Development Index of Xi'an based on Principal Component Analysis

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Abstract

In the post-pandemic stage, China's economy is more adapted to the Innovation-driven economic development model than other countries affected by the epidemic, and it will rise to the challenge and create an economic peak in 2020. In the context of "Innovation-driven" environment, how Xi'an can better adapt to the new trend of economic development by combining its own advantages as an ancient cultural capital mainly depends on whether an Innovation-driven development system with Xi'an characteristics can be established. According to the new development concept, this paper constructs an Innovation-driven development evaluation index system of Shan xi province with five categories of indicators (rich Xi'an, innovative Xi'an, coordinated Xi'an, open Xi'an and beautiful Xi'an), and empirically analyzes the development of Xi'an from 2014 to 2018 by using principal component analysis. The results show that the Innovation-driven development of Xi'an has experienced a process of rising first, then falling, then rising again, and then falling again, which reflects the changing process of Innovation-driven development of Xi'an. The key indicators to identify Innovation-driven development in Xi'an are R$D expenditure, per capita GROSS regional product, number of domestic patent applications authorized, financial industry output value, total import and export value, number of scientific and technological activity institutions, number of R&D personnel and other indicators. At the same time, Xi'an's innovation potential needs to be further released, and key indicators of Innovation-driven development need to be further explored.

Keywords

Xi'an; Innovation-driven Development; Principal Component Analysis; Key Indicators.

1. Introduction

Over the past 40 years of reform and opening-up, China has achieved rapid economic growth and gradually joined the ranks of middle-income countries. However, the original growth mode has been unable to meet the requirements of economic and social development under the new conditions. The fifth Plenary Session of the 18th CPC Central Committee put forward a new development concept of innovative, coordinated, green, open and shared development, and put innovation at the top of the new development concept. Under the new normality of economic development, speeding up the change of economic development mode is particularly urgent. Innovation-driven development is an inherent requirement and strategic plan for the

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transformation of the mode of economic development. It is an inevitable choice for China to respond to changes in the development environment, control the autonomy of development, enhance core competitiveness, better lead the new normality of China's economic development, and maintain healthy economic development. Only energetically developing student innovation economy can realize enterprise transformation and sustainable development. How can Xi'an actively respond to the Innovation-driven economic development strategy bases on the actual situation of its own enterprises. Constructing the Innovation-driven development system with Xi'an characteristics is the key to establish a new concept of development and realize Innovation-driven development.

As an economic concept, innovation was first proposed by Schumpeter, an Austrian American economist, in 1920s and 1930s. According to Schumpeter, innovation consists of five aspects: the introduction of a new product, the use of a new production method, the opening of a new market, the access to a new source of supply of raw materials, and the establishment of a new production organization. Obviously, the innovation here is mainly from the enterprise or micro level, establishing an innovative technology to drive social development management system is a more macro, comprehensive and comprehensive system. From the macro level, Freeman [1] (1987) first proposed the concept of national innovation system. The research on national innovation capability and innovation performance applies this concept. Based on Freeman, Cooker [2] (1992) further put forward the regional innovation system. Domestic scholars Li [3] (2008) and others analyzed the relevant influencing factors of regional innovation system. Wang [4] (2015) and others further analyzed the regional innovation system from the connotation, value and realization path of Innovation-driven development. Sufe and others reviewed Shanghai's Innovation-driven development. Wu [5] (2014) set up a framework for urban Innovation-driven development evaluation, and constructed an Innovation-driven development evaluation system through more detailed index division, and made an empirical study of Guangzhou, Shanghai, Beijing and Shenzhen. Wang [6] (2016) et al. builded an index system of Innovation-driven development ability from four aspects of Innovation-driven subject, input, output and environment, discussing key elements of Innovation-driven development in Shanxi. Li [7] (2016) and others put forward suggestions for Innovation-driven development in the middle reaches of the Yangtze River Economic Belt. Zhang [8] (2018) constructed an Innovation-driven development system with Shan xi characteristics by constructing three categories of indicators: rich Shanxi, harmonious ShanXi'and beautiful Shanxi. On this basis, Zhang (2019) and other scholars established an empirical analysis on the Innovation-driven development system with Shanxi characteristics from 2012 to 2017 by using TOPSIS-entropy weight method.

The research methods of innovation management system in relevant regions in China are relatively early, but the research on the evaluation index of Innovation-driven economic development ability started late. With the proposal of scientific and technological Innovation-driven development strategy, the theory and evaluation system of Innovation-driven development have emerged many research references. Existing studies mainly focus on relatively developed provinces and cities, while there is no mature evaluation index system for Xi'an, which is rich in scientific and technological resources but relatively backward in economic development. From this point of view, it is particularly important to establish an Innovation-driven economic development management system suitable for Xi'an. A perfect evaluation index system for Innovation-driven enterprise development can further release the innovation potential of Xi'an.

ISSN: 2688-9323

2. Overview of Innovation-driven Development in Xi'an

2.1. Economic Development Level of Xi'an

From 2014 to 2018, the average growth rate of Xi'an's GDP was 11.04%, 1.9 percentage points higher than that of the whole country, ranking among the top in China. As shown in Table 1, it ranks below the middle level in the economic aggregate of sub-provincial cities, as shown in Table 1:

Table 1. Table of Xi'an Economic Development from 2014 to 2018

Indicators	2014	2015	2016	2017	2018
Gross Regional Production(100 million)	5492.63	5801.2	6282.65	7471.89	8349.86
GDP per capita(yuan/person)	63794	66938	71647	78368	85114
Value-added of tertiary industry /GDP	59	69.7	62.3	71.5	61.1

The development of tertiary industry is conducive to optimizing the economic structure and social resource allocation, improving the quality and efficiency of development. At the end of 2018, the ratio of the three industrial structures in Xi'an was 3.10:35.04:61.86, which showed a steady decline in the primary and secondary industries and 5.73% increase in the proportion of the tertiary industry compared with 2014, indicating a significant effect of structural adjustment. Table 2 lists the parameters.

Table 2. Table of Industrial Structure Ratio

Industry	2014	2015	2016	2017	2018
the primary industry	3.91	3.8	3.69	3.76	3.1
the secondary industry	39.96	36.65	35.02	34.75	35.04
the tertiary industry	56.13	59.55	61.29	61.49	61.86

2.2. Xi 'an Technological Development Level

In terms of basic resources for innovation, Xi'an has rich scientific and technological resources, with important scientific research bases in aerospace, education, electronics, machinery and other fields. Until 2018, there are 8 national key laboratories in Xi'an, three provincial department of construction of state key laboratories, 86 in Shan xi province key laboratories, 1404 industrial enterprises above designated size, 12 industrial parks with industry as the leading industry around Xi'an ,81 regular institutions of higher education and 63 universities with about 830000 college students.

In terms of investment in science and technology, 23,277 people engaged in science and technology activities in 2018, 18.63% more than in 2014. What's more, it has cost 360173.12 million yuan on R&D science and technology, and there are 42,577 project items. Industrial enterprises above designated size spent 11940.82 million yuan on new product development, and there have been 2,713 new product development projects, bringing a total sales revenue of 88277.78 million yuan.

2.3. Investment Intensity about the Whole Society Research and Exper Amental Development (R&D)

The investment intensity of R$D funds in the whole society is an important index reflecting the scientific and technological economic strength of an enterprise in China. As shown in Table 3, although the GDP of Xi'an is much lower than that of similar cities, only more than half of these three cities, the ratio of R&D to GDP has always been on the high side, with an absolute

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advantage of more than 2 percentage points, ranking the first place in the sub-provincial cities for many years, only 0.8 percentage points lower than that of Beijing (5.64%). To a certain extent, this also shows that it is deeply implementing the Innovation-driven development strategy in Xi'an. The government's support for scientific and technological innovation keeps increasing, driving the steady growth of R&D investment in the whole society, and further strengthening the leading role of scientific and technological support in economic and social development. As shown in Figure 1, although the proportion of R&D in GDP of Xi'an far exceeds the average level of Shanxi Province and the whole country, it still ranks first in the sub-provincial cities although it has fallen down a little in recent years. From the data of international developed cities, from a vertical comparison, there is no doubt that the scientific and technological strength of these countries is increasing, but from the perspective of R&D input/GDP, it is not necessarily a straight rise, and the decline or fluctuation of R&D input is reasonable.

Table 3. R&D activities of sub-provincial cities in 2017

City	R&D spending	Gross domestic product	Proportion of R&D expenditure in GDP (%)
Shenzhen	976.94	22490.06	4.34
Guangzhou	532.41	21503.15	2.48
Chengdu	331	13889.39	2.38
Wuhan	313.68	13410.34	2.34
Hangzhou	396.82	12603.36	3.15
Nanjing	357.67	11715.1	3.05
Qingdao	307.1	11037.28	2.78
Ningbo	241.91	9842.06	2.46
Xian	360.17	7471.89	4.82
Jinan	185.15	7201.96	2.57
Dalian	164.2	6989.8	2.35
Changchun	93.8	6530	1.44
Harbin	109.19	6355	1.72
Shenyang	140.1	5784.73	2.42
Xiamen	142.39	4351.72	3.27

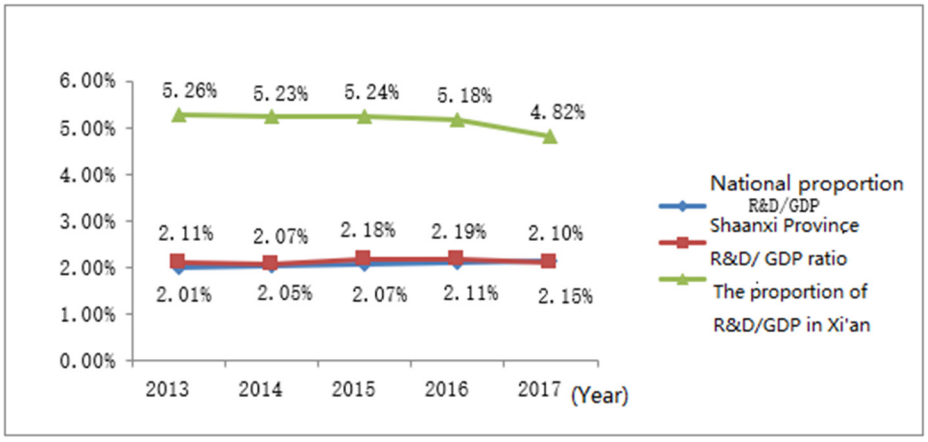

Figure 1. The proportion of R&D to GDP in China, Shanxi Province and Xi'an City from 2013 to 2017

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Through the analysis and summary of Xi'an's innovation driven development in recent years, the article has constructed innovation driven development evaluation index system, not only paying attention to the index system of Xi'an, which plays an important role in economic and social development, but also covering the lack of important factors that could lead to the current inadequate development, thus conducting a comprehensive, objective and scientific evaluation.

3. Innovation-driven Index System Construction in Xi'an

3.1. Prosperous Xi'an

To enrich the material foundation for Xi'an to realize the "Xi'an Dream", the development of Xi 'an is first and foremost economic development. Grain storage and etiquette, economic development and prosperity is the material and cultural foundation to achieve other goals of enterprises. The quality of economic and social development directly determines the development of the next stage. To judge the economic development of a region, we should not only look at the total growth, but also see whether economic development really benefits the people.

3.2. Innovative Xi'an

Industrial development structure is the basis and foundation of the whole social and economic operation. Industrial structure optimization must rely on innovation to drive development. "Innovation has always been an important force driving a country and a nation forward." Therefore, we need to take major scientific and technological innovation as the lead, speed up the transformation of scientific and technological enterprise innovation research results into real social productive forces, accelerate the construction of a new industrial system.

3.3. Coordinate Xi'an

We will adhere to coordinated economic development, focus on promoting coordinated enterprise development between urban and rural areas in China, while accelerating the simultaneous development of new industrialization, agricultural and rural modernization, and urbanization. Therefore, this paper constructs the index system of coordinated development of Xi'an from different angles of the three industries.

3.4. Coordinative Xi'an

Sticking to reform and opening up is Xi'an's adaptation to the trend that China's social economy is deeply integrated into the world market economy. As an important information point of "One Belt and One Road", Xi'an culture crosses the east and west, connects Europe and Asia, and should sound a new horn of reform and opening up to the management world.

3.5. Beautiful Xi'an

Beautiful Xi'an is an important support to realize the "Xi'an Dream". The sustainable development of society requires the harmonious development of man and nature and the green development. Blue sky, clear water and green space all require us to build Xi'an into a resource-conserving and environment-friendly city.

Based on the above analysis, this study combines the characteristics of Xi'an with the five development concepts and divides it into five categories of indicators and 23 first-level indicators, as shown in Table 4.

ISSN: 2688-9323

Table 4. Innovation-driven Development Evaluation System in Xi'an

Target layer	Class indicators	Level indicators
Xi'an Innovation-driven Development Composite Index	Rich Xi'an A_1	Gross regional product X_1
		Gross regional product per capita X_2
	Innovative Xi'an A_2	R&D personnel X_3
		Full time equivalent of R&D personnel X_4
		R&D expenditure X_5
		Ratio of R&D expenditure to GDP X_6
		Number of people engaged in scientific and technological activities X_7
		Number of patent applications granted in China X_8
		Number of scientific and technological activity institutions X_9
	Coordinate Xi'an A_3	Gross industrial output X_{10}
		Per capita of urban and rural households X_{11}
		Per capita net income of rural households X_{12}
		The proportion of added value of tertiary industry in GDP X_{13}
		Financial industry outputX_{14}
		The value added of the non-public sector accounts for the proportion of GDP X_{15}
	Opening Xi'an A_4	Total import and export value X_{16} Total cost of the imported X_{17}
		exports X_{18}
	Beautiful Xi'an A_5	Signing agreements with foreign capital X_{19} Per capita water consumption X_{20} Usage with water X_{21} Coal consumption X_{22} energy intensity per GDP X_{23} population density X_{24} water resources X_{25}

4. Analysis of Xi'an Innovation-driven Development Evaluation Index

4.1. The Data Source

The data is obtained by referring to Xi'an Statistical Yearbook and Science and Technology Bureau. In order to ensure the comprehensive and statistical analysis system of financial indicators, the method of calculating the average value of several years is adopted for the part caused by the missing data of individual indicators. This paper selects the latest data of Xi'an from 2014 to 2018. This paper mainly evaluates the Innovation-driven development of Xi'an in recent five years. In this paper, SPSS22.0 software is used for factor analysis.

ISSN: 2688-9323

4.2. Principal Component Analysis

Principal component analysis (PCA) is a kind of commonly used multi-index comprehensive ability evaluation analysis of teaching methods, through investigating the inner structure relationship of main index management system. Thus, multiple indicators are transformed into a few comprehensive financial indicators that are independent of each other and contain most of the accounting information (80% or more than 85%) of the original indicators. The advantage of this method is that the weight determined by this method is based on the internal structure of the index obtained from data analysis, which is not affected by subjective factors with good objectivity. The comprehensive index (principal component) obtained by this method is independent of each other, which reduces the cross of information and is conducive to analysis and evaluation. There is a strong correlation between the evaluation indicators of enterprise innovation development, and the principal component analysis method can be used to analyze the comprehensive quality evaluation, which can eliminate too much overlapping information and reflect the real situation of Xi'an innovative thinking ability more accurately.

The comprehensive evaluation steps of principal component analysis are as follows:

The original data is standardized with z-Score, a commonly used standardization method, to eliminate the influence of variables on the order of magnitude or dimension. Processing data analysis is as follows:

$$X_{ij}' = \frac{X_{ij} - X_i}{S_i}$$

Table 5. After the Z-score was Standardized

	2014	2015	2016	2017	2018
X_1	-0.98956	-0.73232	-0.33096	0.660459	1.392384
X_2	-1.08517	-0.72137	-0.17648	0.601218	1.381814
X_3	-0.94746	0.060198	-0.96054	0.439704	1.408101
X_4	-0.73508	0.785772	-1.11529	-0.18588	1.250475
X_5	-1.2777	-0.50052	-0.0757	0.483824	1.370091
X_6	0.617518	0.455013	0.509182	0.184172	-1.76588
X_7	-0.57471	-0.67761	0.354424	-0.70903	1.606926
X_8	-1.23165	-0.64863	-0.06657	0.688156	1.258698
X_9	-0.84681	-0.5395	-0.1639	-0.1639	1.7141
X_{10}	-1.39123	-0.39579	1.195612	-0.09381	0.685221
X_{11}	-1.13202	0.257054	-0.80546	0.296258	1.384169
X_{12}	-1.32492	-0.2676	-0.29034	0.543867	1.338989
X_{13}	-1.65862	-0.21671	0.516896	0.601218	0.757215
X_{14}	-1.40683	-0.45507	0.043663	0.627288	1.190947
X_{15}	-1.62872	-0.29915	0.531826	0.698022	0.698022
X_{16}	-0.91161	-0.59565	-0.50169	0.482676	1.526272
X_{17}	-0.88276	-0.7219	-0.48132	0.660727	1.425258
X_{18}	-0.92378	-0.23894	-0.51968	0.003274	1.679125
X_{19}	-0.31496	1.653558	0.169596	-0.73895	-0.76924
X_{20}	1.629492	-1.0038	-0.48415	-0.28608	0.144545
X_{21}	-1.30052	-0.68478	0.219829	0.541453	1.224021
X_{22}	0.830703	0.664675	0.438206	-0.33168	-1.60191
X_{23}	1.317323	0.81066	-0.47289	-0.74311	-0.91199
X_{24}	-1.0032	-0.4535	-0.38479	0.233622	1.607872
X_{25}	-1.48715	0.031875	0.310777	-0.14742	1.291916

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$X_{ij}^{'}$ is the standardized variable value and X_{ij} is the actual variable value. The normalized value of the variable fluctuates around 0, with a value greater than 0 being above average and a value less than 0 being below average. The data show in Table 5.

After standardization, the correlation test of data technology is carried out by analyzing whether there can be linear correlation between the original variables of enterprises, which is the basis of principal component analysis. The correlation coefficient matrix has a strong linear relationship and can be extracted for principal component analysis. In the results generated by SPSS 22.0, the total variance interpretation table will form a series of characteristic values, as shown in Table 6:

Table 6. Total Variance Table

composition	Initial eigenvalue			Extract the sum of squares and load			Rotate squares and load		
	summation	% of the variance	Cumulative %	summation	% of the variance	Cumulative %	summation	% of the variance	Cumulative %
1	19.237	76.948	76.948	19.237	76.948	76.948	10.177	40.706	40.706
2	2.738	10.953	87.901	2.738	10.953	87.901	8.933	35.731	76.437
3	2.023	8.094	95.995	2.023	8.094	95.995	3.157	12.627	89.065
4	1.001	4.005	100	1.001	4.005	100	2.734	10.935	100
5	3.14E-15	1.26E-14	100						
25	-3.37E-15	-1.35E-14	100						

As can be seen from Table 6, the first four principal components meet the eigenvalues greater than 1. If the cumulative variance contribution rate is greater than 95%, the first four principal components can be extracted. The composite scoring model can be derived from the sum of squares of rotation in the table:

$$F = 0.40706F_1 + 0.35731F_2 + 0.12627F_3 + 0.10935F_4$$

The degree to which each component explains the indicators can be clearly seen from the component matrix table, as shown in Table 7. Table 7 is in descending order according to the load degree of the first major component. It can be seen from Table 7 that the industrial output value and the proportion of tertiary industry in GDP have a higher load on the second principal component, indicating that the second principal component can well explain its information. The third principal component has a better reflection on the total number of R&D employees and the projects signed by Chinese foreign-funded enterprises. The fourth principal component can better reflect the number of agricultural science and technology companies engaged in and the total industrial output value. Other relevant indicators, such as patent application of domestic enterprises, output value of financial industry, total value of import and export trade, total water consumption, regional economic GDP, and R&D expenditure, have been explained by the first principal component analysis.

As shown in Table 8, the comprehensive score of Xi'an Innovation-driven development from 2014 to 2018 was a fluctuating process of first rising, then falling, then rising and then falling. In 2017, the score was the highest, and then falling. It has been negatived from 2018. This change is in line with the enterprise development strategy that our country can put forward, from the past focusing on high-speed economic growth to China's speed and quality management, more emphasis on high-quality development. When it comes to each principal component score, the score of the first principal component was the highest in 2014. The first principal component mainly explained the number of people engaged in science and technology, industrial output value and other indicators, indicating that Xi'an developed well in these

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aspects. The score of the second principal component was the highest in 2015, showing that Xi'an invested more in the tertiary industry and industry, resulting in a significant increase in the overall score in 2015 compared with 2014. In 2016-2018, the third principal component analysis score had a significantly decline trend, reflecting that Xi'an in these three years, the domestic enterprises to apply for patent and decline in financial industry output value and so on have an effect. But at the same time, the amount of water was declining, showing that there was a decrease in the period of the innovative thinking ability, which was closely related with the limitations of environmental education policy. Meanwhile, in 2018, all four principal component scores were negative. The standardized score of the second-level index below the first-level index is multiplied by the corresponding coefficient to obtain the score of the first-level index, as shown in Table 9 and Figure 2.

Table 7. Compositional Matrix Table

	1	2	3	4
X5	0.996	0.062	-0.044	-0.039
X12	0.986	0.049	0.095	-0.124
X2	0.983	-0.053	-0.148	-0.096
X24	0.982	-0.173	0.059	0.043
X8	0.978	0.065	-0.145	-0.134
X14	0.974	0.188	-0.066	-0.106
X1	0.971	-0.13	-0.136	-0.15
X16	0.969	-0.226	-0.02	-0.093
X21	0.965	0.169	-0.198	-0.017
X17	0.955	-0.215	-0.109	-0.174
X18	0.942	-0.239	0.203	0.118
X9	0.936	-0.207	0.017	0.282
X25	0.894	0.295	0.192	0.277
X11	0.88	-0.125	0.439	-0.135
X3	0.875	-0.252	0.354	-0.214
X13	0.844	0.528	-0.064	-0.074
X15	0.832	0.53	-0.121	-0.117
X7	0.758	-0.157	-0.117	0.622
X10	0.664	0.608	-0.228	0.371
X4	0.614	-0.276	0.739	-0.022
X20	-0.335	-0.826	-0.437	0.12
X19	-0.454	0.473	0.735	0.172
X23	-0.881	-0.31	0.347	0.091
X6	-0.887	0.386	-0.108	-0.228
X22	-0.963	0.264	0.048	-0.001

Table 8. Principal Component Score and Composite Score Table

	F1	F2	F3	F4	F
2014	0.752	-0.377	-0.187	-0.056	0.141667
2015	-0.282	0.968	-0.112	0.073	0.224925
2016	-0.084	-0.112	0.893	-0.113	0.026191
2017	0.270	0.140	-0.064	1.122	0.274539
2018	-0.566	-0.278	-0.207	-0.463	-0.4065

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Table 9. Innovation-driven Development First-level Index Score in Xi'an from 2014 to 2018

	2014	2015	2016	2017	2018
Rich Xi'an	-0.071	-0.050	-0.018	0.043	0.095
Innovative Xi'an	-0.148	-0.012	-0.090	0.063	0.187
Coordinate Xi'an	-0.240	-0.030	-0.014	0.095	0.188
Openi Xi'an	-0.063	-0.046	-0.034	0.040	0.103
Beautiful Xi'an	-0.196	-0.074	0.000	0.067	0.204

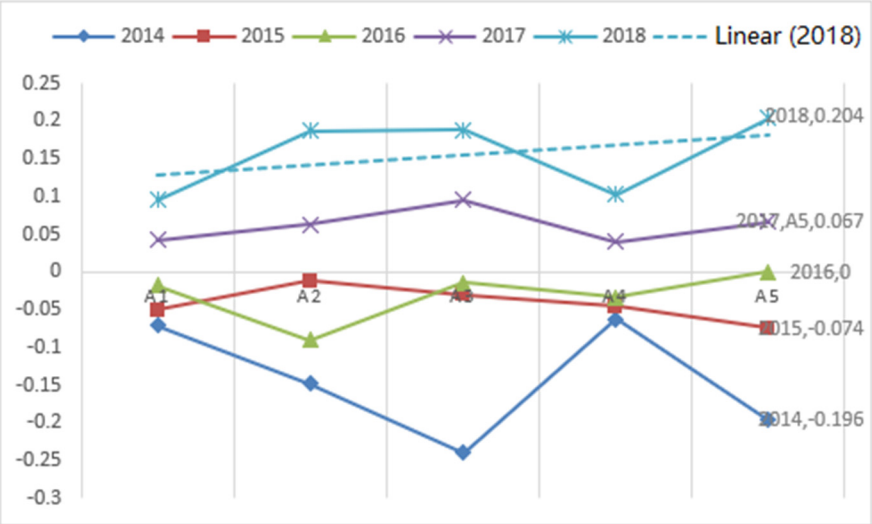

Figure 2. Innovation-driven Development First-level Index Score in Xi'an from 2014 to 2018

As can be seen from Table 9 and Figure 2, the scores of indicators such as rich Xi'an, Innovative Xi'an, coordinated Xi'an, opening Xi'an and beautiful Xi 'an show a positive trend on the whole, rising rapidly since 2016, and innovative Xi'an factor in 2018 was higher than that in 2017, which was also due to the output of activities reflecting scientific and technological innovation in the process of data collection. The overall level of scientific and technological progress is consistent. In 2017, the coordination of Xi'an scores was higher than other factors of production, which could indirectly reflect that Xi'an adjust enterprise tends on three industry and gradually optimize the working state, and rich in Xi'an's score in 2017 and 2018 were lower than any other relevant factors, it also indirectly showed the Xi'an science and technology innovation technology driven construction of socialist economic development, The quality of people's living environment has not reached an ideal educational goal, and the potential of innovation needs to be further released.

5. Conclusions and Policies Proposal

5.1. Conclusion

By constructing an evaluation index system of Innovation-driven development of Xi'an with five indicators for developing Xi'an, the Innovation-driven development of Xi'an from 2014 to 2018 have been empirically analyzed, and the following conclusions are drawn:

The indicators that contribute a lot to the Innovation-driven development of Xi'an include research spending, rural residents' per capita income, per capita GDP, population density, the domestic patent license number, the output value of the financial industry, the total GDP, import and export. What's more, gross value of industrial output, the non-public economy increments of GDP, the increment of GDP of the third industry, the ratio of business growth to GDP and the tertiary industry also make their contribution. These indicators are grouped under the

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coordinated Xi'an indicator. Indicators such as coal consumption and water resources rank low. Indicators such as signing agreements with foreign investment and population density are all negative, indicating that Xi'an's Innovation-driven development level has been negatively affected to some extent.

A major research contribution index for "innovative development of Xi'an" includes R&D expenditure, R&D personnel, the number of patent applications granted by domestic enterprises and the number of organizations of scientific and technological economic activities. The main contributions to the analysis of coordinate Xi 'an include the gross industrial output value, the output value of the financial industry, the per capita income of rural residents to their families, and the proportion of the added value of the third part of the industry in GDP. Some major contributions to "open Xi 'an" include the total value of import and export trade, and the main contribution indicators to "beautiful Xi 'an" are energy consumption per unit GDP and total water resources.

5.2. Policy Suggestions

In order to build a moderately prosperous society in an all-round way, establish a new development concept, promote Xi'an's high-level development and realize the "Xi'an Dream", relevant departments can formulate relevant measures according to the contribution indicators of Xi'an's Innovation-driven development.

1. Increasing investment in scientific research to stimulate the driving force of Innovation-driven development

Research and development investment is the material basis and important premise of scientific and technological innovation, Xi'an should continue to increase research and development investment, optimize the dynamic structure, and improve the regional independent innovation ability. What's more, the government should attach great importance to the investment in basic research, actively guide Chinese enterprises to strengthen the investment in scientific research through a series of preferential policies, and take the key technology fields as the breakthrough to form an innovative spirit supporting strategy, which not only emphasizes the guidance of industry, but also pay attention to the application results of students.

2. Establishing the concept of development and planning the coordinated development between urban and rural areas and the three industries.

The government should change "urban construction industry, rural agriculture" binary thinking, and closely combine with the development of urban and rural areas, unified coordination, comprehensive consideration, sets up the integrated information of socialist economic development research train of thought of workers and peasants. With two goals in 100 as the guide and the development of vision, as a whole train of thought, it is beneficial to solve the problems between urban and rural students in our country and promote the coordinated development of enterprises in the three industries.

3. Stepping up development and continuing to promote the Belt and Road Initiative

We will step up infrastructure construction, define our own functions, open wider to the outside world, and comprehensively improve industrial integration. Formulate detailed and sustainable action plans for the Belt and Road Initiative, focusing on cultural, financial and ecological industries.

4. Promoting ecological civilization construction and green development of Xi'an

Xi'an and its surrounding areas should be taken as a whole to establish a pollution control system with regional characteristics featuring "priority in planning, technical support, regional cooperation and whole-person participation". In the aspect of planning priority, we should make macro planning according to the regional functions and industrial structure of Xi'an city. In the aspect of technical support, prevention and control technology and health care

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technology should be organically combined. In terms of "regional cooperation", pollution control should be coordinated with prevention and control, cooperating with governments and enterprises, and diversified management should be implemented.

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