Original Paper

Optimising the Business and Talent Environment in Chengdu to Help High-quality Economic Development

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Abstract

This paper selects the time series data of Chengdu city from 2009 to 2018, refers to the existing literature, constructs an econometric model for empirical research, uses Eviews software to conduct regression analysis and model testing, and selects the data of its representative variables from the three perspectives of the construction of business talent environment (policy environment, talent attractiveness, and ecological livability level) to conduct an empirical study on the relationship between business talent environment and The results show that: the financial expenditure on social security and employment The results show that social security and employment expenditure, average annual wage and green space in Chengdu, as important factors influencing the construction of business and talent environment, have a significant effect on the high-quality economic development of Chengdu.

Keywords

Business talent environment, High-quality economic development, Empirical study

1. Introduction

According to the communiqué of the Fifth Plenary Session of the 19th Central Committee (published on 29 October 2020) and the draft proposals of the 14th Five-Year Plan (published on 3 November 2020), the two documents clearly point out the specific work of optimising the business environment. In the process of optimising the business environment, we should recognise the importance of talent, the close relationship between business and talent, the core of the business environment is the talent environment, talent is not only the main body of innovation and entrepreneurship, but also the main body of business. The construction of the business environment should be driven by talents, and if talents gather, the industry will flourish and the city will prosper. Optimising the business environment for talent in Chengdu will have a positive effect on attracting investment, enhancing the city's status

and economic development.

This paper seeks to explore the importance of talent in Chengdu's business environment and to analyse the positive effects of optimising and upgrading the construction of Chengdu's talent environment on the growth of regional GDP and the promotion of high-quality economic development. Through empirical analysis, three representative variables, namely policy environment, talent attractiveness and livability, are selected to explore the impact of optimising the construction of the business and talent environment in Chengdu on economic development, and to enhance the optimisation of the business and talent environment through three aspects: the disclosure of talent-related government information, the enhancement of the city's talent attractiveness and the creation of an ecologically livable city, so as to add to the high-quality development of Chengdu's economy.

2. Review of the Literature

2.1 Business Environment Indicator System

Korner et al. (2002) use the Integrity Index, the Integrated Governance Index, the Capture Index, the Transparency Index and the Corporate Governance Risk Index as a system for evaluating the business environment, and Cebula (2013) finds that optimising the business environment can significantly increase economic dynamism and per capita income, using a sample of 30 OECD countries and regions from 2003 to 2006. Mehmet et al. (2016), in constructing a model for measuring the quality of the business environment for SMEs, suggest that they focus more on analysing the links between factors and the impact of factors on the business environment than other measurement subjects who focus too much on the main elements that constitute the business environment. Song and He (2018) argue that in the process of the reform of the management and service, the World Bank's business environment indicator system is introduced to analyze the conceptual evolution process from the investment environment to the business environment, and benchmark the excellent business environment of typical countries with reference to the indicator system constructed by the World Bank.

2.2 Business Talent Environment

Wu (2004) argues that the environment for talents should be actively created and continuously optimised in order for their intelligence to be enhanced, their vitality to be strengthened and their creativity to flourish. According to Dai (2010), social security plays a significant role in the relationship between labour supply and demand and resource allocation, and it is very important to deal with the relationship between employment and social security in a scientific way. Qiu and Cao (2017) analyse the role of fiscal social security expenditure on employment from the perspective of asymmetric effects, using the panel data of each province in China from 1998 to 2014 as a sample, and using GDP per capita as a threshold variable, and the results of the study show that its positive promotion effect becomes more significant as the level of economic development rises. Gu (2018) believes that talent resources have gradually become the most critical strategic resource in competition, and the role of talent attractiveness is significant for urban development. Ji (2019) Improving the business

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environment from the perspective of talent environment, we should create a good governmental, economic and service environment for talent innovation and entrepreneurship and gathering and development. Provide timely, effective and supporting investment and financing services, human resources services, medical and recreational services and living and settlement services for talents, so as to form an environmental advantage that attracts and tethers talents.

2.3 Business Environment and Quality Economic Development

Ren (2018) in the context of the new era, the study of China's economy shifting from the stage of high speed growth to the stage of high quality development shows that the theoretical orientation of high quality development is expressed in improving the effectiveness of supply, achieving equitable development, ecological civilization and human modernization. Wang and He (2018) on the basis of the systematic elaboration of the connotation of high-quality economic development, the main focus points of ecological environmental protection to promote high-quality economic development are analyzed with emphasis. Wang, Lu and Wang (2019) Systematically summarize and sort out the research results and experiences of the coupled and coordinated development of economic development and environmental protection, and further clarify the connotation objectives, theoretical system and realization path of the synergistic development of economic quality development and ecological environment. He and Wang (2020) argue that a good business environment is an important prerequisite for giving play to the decisive role of the market in allocating resources, and is conducive to promoting high-quality development. With the help of principal component analysis, a comprehensive index of economic development quality was constructed, and it was found that optimizing the business environment would significantly improve the development quality of an economy. Cui (2020) uses empirical research to conclude that there is a significant positive contribution of the business environment to GDP per capita in countries along the Belt and Road, and that the improvement of the business environment can promote the development of national economies. Cai (2020) adopted an empirical study to examine the relationship between business environment and economic quality, and found that there is a significant positive correlation, and the business environment has a significant contribution to economic quality.

2.4 Literature Review

This paper searches the literature based on three negative keywords and finds that the business environment, as a hot topic in recent years, has been widely discussed by scholars. From the literature on the indicators system of the business environment, the business talent environment, and the business environment and high-quality economic development, we can find that the indicators of the business environment are gradually improved with each passing day, while the talent environment is always in an extremely important position, and the construction of business talent is conducive to retaining talents, which is the necessary way to optimise the business environment. By improving the business talent environment, it can also contribute to the construction of the ecological environment and enhance the quality and efficiency of economic development, which is the feasibility and necessity of this study.

In the literature, we found that there are some shortcomings, as the previous research has not paid enough attention to the construction of talent environment in the business environment indicators, and there is little in-depth discussion on the relationship between talent environment, business environment and economic development. Therefore, the strength of this paper lies in the fact that based on the previous studies, it takes the essence of them and makes up for their shortcomings. It selects three dimensions of the indicators of the business talent environment and discusses three major perspectives in optimising the construction of business talent, from the social security governmental environment to improving the salary of talents and increasing the attractiveness of talents to improving the construction of urban greenery and promoting the high-quality development of urban green economy.

3. Study Design

3.1 Model Setting and Variable Selection

This paper develops a multiple linear regression model based on the existing literature on optimizing the soft power of the marketing environment and high-quality economic development, taking into account the actual situation in Chengdu.

$$Y_i = \hat{\beta}_0 + \hat{\beta}_1 X_1 + \hat{\beta}_2 X_2 + \hat{\beta}_3 X_3 + e_i$$

where Y is used as the explanatory variable: Chengdu's gross regional product (GDP), in RMB.

X1 as explanatory variable: social security and employment expenditure as a share of total fiscal expenditure, in %.

X2 as the explanatory variable: average annual wage of employed persons in all urban units in Chengdu, in RMB.

X3 as explanatory variable: green space area in Chengdu, in hectares.

The explanatory variable X1 is the proportion of social security and employment expenditure to total fiscal expenditure, which is conducive to the rational allocation of resources and reflects the importance the government attaches to the business environment for talents and the strength of policy support; the explanatory The explanatory variable X2 uses the average annual wage of all urban employees in Chengdu, which is an important indicator for attracting talents, so it is easy for talents to pay attention to it and can better reflect the attractiveness of talents in Chengdu; the explanatory variable X3 uses the area of green space in Chengdu to measure, which can reflect the greening condition and livability of the city and optimize the construction of ecological environment to meet the requirements of sustainable and high-quality economic development. The green area reflects the greening condition and livability of the city.

3.2 Data sources

The statistics are obtained from the Chengdu City Statistical Yearbook published on the website of the Chengdu City Bureau of Statistics. This paper uses the data from 2009-2018 as the time period to create the following sample of time series data types.

Table 1. Relevant Data 2009-2018

Year	GDP Y/10000	Share of fiscal expenditure X1/%	Average annual wage X2/$	Area of green space X3/ha
2009	45026032	4.200874718	27272	16123
2010	55513336	2.199267527	30515	16902
2011	69505786	2.775646151	34008	17314
2012	81389438	3.292680585	38221	18519
2013	91088904	3.427138244	47644	19082
2014	100565926	3.603636242	51681	19757
2015	108011633	4.719651345	57480	21902
2016	121702335	7.196849583	61330	31084
2017	138893940	5.314655838	65098	32617
2018	153427716	5.206081574	71300	34094

4. Empirical Analysis

4.1 Descriptive Statistics

Table 2. Descriptive Statistics Results

	GDP	X1	X2	X3
Observations	10	10	10	10
Average value	96512505	4.193648	48454.9	22739.4
Median	95827415	3.902255	49662.5	19419.5
Standard deviation	35178891	1.464897	15424.29	7025.331
Skewness	0.132756	0.652287	0.002213	0.746238
Kurtosis	1.981198	2.81611	1.620152	1.799687

According to Table 2, in terms of skewness, all four variables have a skewness greater than zero, indicating that the selected variables are all positively skewed (right skewed), with more extreme values at the right end of the data and strong dispersion to the right of the data mean; in terms of kurtosis, all four variables are also greater than zero, indicating that the data distribution is steeper than the normal distribution, with a cusp.

4.2 OLS Least Squares Regression Analysis

The parameters in the model were estimated using the least squares method on the collected receipts and the regression analysis resulted in the following.

Table 3. Results of OLS Regression Analysis

Method: Least Squares

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13740706	4772967	-2.878861	0.0281
X1	-3954536	1610435	-2.455571	0.0494
X2	1873.895	212.7613	8.807501	0.0001
X3	1584.815	538.5396	2.942801	0.0259
R-squared	0.990635	F-statistic		211.5639
Adjusted R-squared	0.985953	Prob(F-statistic)		0.000002
S.E. of regression	4169451	Durbin-Watson stat		1.938645

According to the OLS regression results in Table 3, it can be seen that

$\beta_0 = -13740706 \ \beta_1 = -3954536 \ \beta_2 = 1873.895 \ \beta_3 = 1584.815$

Therefore the normative form is.

$\hat{Y}_i = -19740706 - 3954536 X_1 + 1873.895 X_2 + 1584.815 X_3$

$$(4772967)\ (1610435)\ (212.7613)\ (1584.815)$$

$$t = (-2.878861)\ (-2.455571)\ (8.807501)\ (2.942801)$$

$$R^2 = 0.990635 \ \overline{R^2} = 0.985953 \ D.W. = 1.938645 \ F = 211.5639$$

4.3 Testing of the Model

4.3.1 Statistical Inference Tests

1. Goodness-of-fit test

The closer this statistic is to 1, the better the fit of the model. Since $\overline{R^2}$ = 0.985953, it is easy to know that the model fits well, which suggests that the explanatory variables social security and employment expenditure as a share of total fiscal expenditure, average annual wages, and green space can explain the vast majority of the variance in the explained variable GDP.

2. T-test

In the variable significance test, the following original and alternative hypotheses were designed for (X1,X2,X3, i=1,...,10): H0: $\beta_j = 0$ H1: ($\beta_j \neq 0$ j=1,2,3,4)

Given a significance level of α = 0.05, the critical value of t0.025 (6) = 2.447, for a degree of freedom of n-k-1 = 6 for the t distribution table was checked. From the data in Table 2, the β_0、β_1、β_2、β_3 corresponding t-statistics are -2.878861, -2.455571, 8.807501, and 2.942801, respectively, all of which have absolute values greater than t0.025 (6) = 2.447, which indicates that at the significance level α = 0.05, all should reject H_0: $\beta_j = 0$ (j = 0,1,2,3), respectively, which means that when other explanatory variables remain unchanged, the explanatory variables "social security and employment expenditure as a share of total fiscal expenditure" (X1), "average annual wage" (X2), "green space area "(X3) have a significant effect on the explanatory variable "Chengdu's regional GDP" (Y).

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3. F-test

The F-test for significance of the equation is to test whether the β_0、β_1、β_2、β_3 parameters in the model are significantly non-zero. According to the principles and procedures of hypothesis testing, the original and alternative hypotheses are

H0: $\beta_0 = \beta_1 = \beta_2 = \beta_3 = 0$ H1: $\beta_j \neq 0$ (j=1,2,3,4) not all zero

According to Figure 1, F = 211.5639, given the significance level α = 0. 05, check the F distribution table and get the critical value F(3,6) = 8.94. From Table 2, we get F = 66.265815 > F0.10(3,6) = 8.97, rejecting the original hypothesis H0: $\beta_0 = \beta_1 = \beta_2 = \beta_3 = 0$, indicating that the linear relationship of the model is significant at the 5% significance level. This indicates that the regression equation is significant, i.e. "social security and employment expenditure as a proportion of total fiscal expenditure" (X1), "average annual wage" (X2), "green area" (X3) The regression equation has a significant effect on "GDP of Chengdu" (Y)

4. P-value test

According to Figure 1, p=0.000002 is less than 0.01, indicating that "social security and employment expenditure as a share of total fiscal expenditure" (X1), "average annual wage" (X2), "green area "(X3), have a significant effect on "Chengdu's gross regional product" (Y)

4.3.2 Econometric Tests

1. Multicollinearity (VIF method)

Multicollinearity is the assumption that there is no linear relationship between the explanatory variables or that their observations are linearly uncorrelated with each other. Experience has shown that when $_{VIFj}$ ≥ 10, this indicates significant multicollinearity between the explanatory variables and the remaining explanatory variables.

Table 4. Variance Expansion Factor VIF Results

Variance Inflation Factors		
	Uncentered	Centered
Variable	VIF	VIF
X1	29.11817	2.881277
X2	66.71227	5.575454
X3	93.6758	7.410606

As can be seen from the VIF results in Table 4, there is no multicollinearity in this multiple linear regression model.

2. Heteroskedasticity (White's test)

Heteroskedasticity refers to the fact that the dispersion of the observed values of the explanatory variables varies with the explanatory variables. To determine whether heteroskedasticity exists in this model, the White test was used and the results obtained are shown in Table 5.

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Table 5. White Test Results

Heteroskedasticity Test: White			
F-statistic	1.140548	Prob. F(3,6)	0.4057
Obs*R-squared	3.631686	Prob. Chi-Square(3)	0.3041
Scaled explained SS	1.795475	Prob. Chi-Square(3)	0.6159

As can be seen from Table 5, Obs*R-squared = 3.631686, corresponding to a p-value = 0.3041 > a = 10% (significance level), at which point the original hypothesis of homoscedasticity is accepted, so the model can be largely judged to be free of heteroscedasticity.

3. Autocorrelation (BG test)

Table 6. BG Test Results

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.676152	Prob. F(2,4)	0.5585
Obs*R-squared	2.526583	Prob. Chi-Square(2)	0.2827

From Table 6, Obs*R-squared = 2.526583, which corresponds to a p-value of 0.2827 > a = 10%, and the original hypothesis of no autocorrelation is accepted by the BG test. This indicates that there is no serial autocorrelation in the model.

4.3.3 Finalisation of the Model

Based on the above analysis, the final model equation set up has the following canonical form.

$$\hat{Y}_i = -19740706 - 3954536X_1 + 1873.895X_2 + 1584.815X_3$$

$$(4772967) \quad (1610435) \quad (212.7613) \quad (1584.815)$$

$$t = (-2.878861)(-2.455571)(8.807501)(2.942801)$$

$$R^2 = 0.990635 \quad \overline{R^2} = 0.985953 \quad D.W. = 1.938645 \quad F = 211.5639$$

5. Conclusions and Recommendations

The article is based on the time series data of Chengdu city from 2009 to 2018, and selects social security and employment financial expenditure, average annual wage and green space in Chengdu city as important influencing factors of the construction of business talent environment to analyze and explore the role of the construction of business talent environment on the high-quality economic development of Chengdu city. The results of the econometric empirical analysis of Eviews software show that the business talent environment on economic development The results of the empirical analysis with Eviews software show that the business talent environment has a significant effect on economic development, and the continuous optimisation of Chengdu's business talent environment can provide a positive effect on Chengdu's high-quality economic development.

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The following recommendations are made for the three main perspectives selected for this paper to optimise the business talent environment.

5.1 Policy Environment

The Chengdu Municipal Government should continue to deepen the reform of "decentralisation" and promote the decentralisation of the business environment for talents. Innovate the approval and service methods in the key aspects of the business talent construction, and insist on deepening from the rectification of the outstanding difficulties and key issues such as the introduction of talents to the long-term mechanism. Create first-class talent construction government services, carry out "high-quality talent introduction", "preferential policies for settlement", "precise employment" and other work, maintain the continuity of business talent construction, system In addition, the Chengdu government should improve the talent environment and optimise the business environment by improving the system and the system. In addition, the Chengdu municipal government should improve the social security system and system, further improve the allocation of resources for social security and employment expenditure, promote the optimisation and upgrading of the social security structure, lay a solid foundation for the retention, introduction and use of talents, increase the importance of the business talent environment, let the talents in Shu enjoy the benefits of the policy, and provide them with a good opportunity to to provide a good policy environment for them to "take root".

5.2 Talent Attraction

Talent is a major factor in the city's business environment. To provide sufficient talent preparation for the construction of the city's business environment, Chengdu should further create a good environment for innovation, entrepreneurship and gathering and development that attracts and tethers incoming talent. Focusing on economic construction, we will continue to improve the economic environment and use it to stimulate the construction of a business talent platform. From the perspective of striving to raise the average salary of in-service employees, we should establish a sound promotion and reward system and improve the growth and development mechanism for talents, so as to provide them with better returns and expand their space to realise their self-worth. Chengdu should leverage on the construction of high-tech industrial development zones, national free trade zones and autonomous innovation demonstration zones to establish and improve high-quality and high-level high-tech service institutions to provide effective services for the precise matching of innovative patent projects and successful transformation of science and technology for talents entering Chengdu. We will continue to improve the infrastructure of Chengdu's business and talent environment, give full play to the unique advantage of "slow life and fast work", and strive to improve the material living standards of the people of Chengdu and enhance their happiness index.

5.3 Level of Ecological Liveability

We attach importance to ecological construction, expand the area of green space in the city, and improve the livability of Chengdu. Only when living comfortably will talents be "at ease and settled"; only when the environment is elegant will talents be "settled and settled". The city's modern service

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functions, which are "suitable for living, living and working", will attract and retain talents and promote the settlement of talents with high quality. Furthermore, it is of great significance for the sustainable development of the business environment to attach importance to the construction of ecological civilisation and to continuously improve the level of ecological livability in Chengdu. The city should build an ecological civilisation system, continue to promote the construction of the "Tianfu Green Road" and "Ecological Wetland", continue to fight the battle for blue sky, blue water and clean soil, build a beautiful Chengdu, and enhance the quality and efficiency of high-quality economic development.

References

Cai, L. (2020). Business environment, spatial spillover and economic quality. *Statistics and Decision Making*, *36*(21), 106-109.

Cebula, R. (2013). Which Economic Freedoms Influence per Capita Real Income? *Applied Economics Letters*, *20*(4), 368-372. https://doi.org/10.1080/13504851.2012.707768

Civelek, M. (2016). A Model of Measurement of the Quality of Business Environment in SME Segment. *Journal of International Studies*, *9*, 90-102. https://doi.org/10.14254/2071-8330.2016/9-2/6

Cui, X. S. (2020). The impact of business environment on economic development in countries along the "Belt and Road" - an analysis based on the World Bank's business environment indicator system. *Journal of Beijing University of Commerce and Industry (Social Science Edition)*, *35*(03), 37-48.

Dai, J. (2010). Reflections on the relationship between employment and social security in China--and the correct handling of the two in the context of the international financial crisis. *Journal of Guangxi Economic Cadre Management College*, *1*, 101-104.

Gu, W. J. (2018). *Evaluation and comparative study on talent attractiveness of cities*. Chongqing University.

He, D. X., & Wang, J. (2020). Business environment and high-quality economic development: An indicator system and empirical study. *Journal of Shanghai University of International Business and Economics*, *27*(06), 51-62.

Ji, Y. Z. (2019). Business environment and talent environment. *China Personnel Science*, *04*, 61-66.

Korner, P., Kudrna, Z., & Vychodil, O. (2002). Measuring Business Environment Quality in Central Europe. *Finance AUVER*, *52*, 674-697.

Qiu, R. Y., & Cao, W. (2017). Asymmetric effects of fiscal social security spending on employment in the context of supply-side reform - an empirical analysis based on a panel threshold regression model. *Journal of China Institute of Labor Relations*, *2*, 38-47.

Ren, B. P. (2018). The shift of China's economy from high-speed growth to high-quality development in the new era: Theoretical interpretation and practical orientation. *Academic Monthly*, *50*(03), 66-74+86.

Song, L. L., & He, C. X. (2018). The logic and promotion path of the reform of management and service under the perspective of optimizing business environment--an analysis based on the World Bank's business environment indicator system. *China Administration*, *04*, 67-72.

Wang, X. H., & He, J. (2018). Paths and actions for ecological protection to promote high-quality economic development in China. *Environmental protection*, *46*(11), 7-10.

Wang, Y. B., Lu, Y., & Wang, W. H. (2019). New progress of research on coordinated coupling of high-quality economic development and ecological environmental protection. *Journal of Beijing University of Technology (Social Science Edition)*, *19*(05), 84-94.

Wu, D.G. (2004). Optimizing the talent environment and enhancing the competitiveness of talents. *China Talent*, *02*, 58-60.