Research on the Impact of Regional Economy in the Chengdu-Chongqing Economic Circle on the Output Value of the Construction Industry

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Abstract. In recent years, the situation in the construction industry has been extremely severe, with prominent issues such as market disorder, excessive "internal competition" in the industry, and "high debt, high leverage, and high risk" of enterprises, resulting in huge challenges for the construction industry. In this context, this article uses empirical analysis methods to deeply explore the impact of regional economy in the Chengdu Chongqing Economic Circle on the output value of the construction industry. The research results show that there is a significant strong correlation between the regional economy and the construction industry output value in the Chengdu Chongqing Economic Circle, with the impact of the secondary and tertiary industries on the construction industry output value being the most prominent, and its gray correlation degree is also the highest. At the same time, this article also conducts an in-depth analysis of the existing problems in the construction industry and proposes targeted countermeasures and suggestions.

Keywords: Chengdu Chongqing Economic Circle; Regional Economy; Construction Industry Output Value; Linear Regression Analysis.

1 Introduction

Since the 13th Five Year Plan, the development of the Chengdu Chongqing region has entered a new stage and gradually presented a new trend of dual core development in Chengdu and Chongqing[1](Chongqing Development and Reform Commission, 2024). In this context, the construction industry plays an irreplaceable role in the construction of major infrastructure and the implementation of national strategies in Chengdu and Chongqing[2] (Li Qiangsheng, 2024).

The construction industry is one of the pillar industries of the national economy, playing an important role in driving economic growth and creating employment opportunities[3] (Jin Minqiu, 1986). However, in recent years, the growth rate of fixed assets investment in the construction industry has declined significantly, the default and bankruptcy reorganization of construction enterprises have become the norm, and

K. Zhang et al. (eds.), *Proceedings of the 5th International Conference on Economic Management and Big Data Application (ICEMBDA 2024)*, Advances in Economics, Business and Management Research 313,
https://doi.org/10.2991/978-94-6463-638-3_14

the number of construction industry practitioners has continued to decrease. In the past, the pursuit of "quantity" growth has been more than the neglect of "quality" improvement, resulting in many problems, which is contrary to China's new development philosophy, and restricts the sustainable development of the construction industry. Therefore, the construction industry urgently needs to establish new development ideas.

Currently, many scholars have focused on the impact of the construction industry on regional economy. For example, Duan Zongzhi and Jiang Wei (2021)[4] analyzed the construction industry situation from 1999 to 2017 based on a fixed effects coefficient model, and found that there is a stable equilibrium relationship between regional GDP and regional construction industry output value, and the construction industry has a significant positive impact on regional economic growth, with significant differences in contribution elasticity among different regions; Cai Binqing and Liu Yuanfang (2010)[5] conducted a study using relevant panel data and found that the construction industry is highly correlated with regional economic growth. The pillar industry status of the construction industry is significant, and the impact effects vary greatly in different regions, with the western region being more pronounced. However, research on the impact of the economy on the construction industry is very rare. For example, Anning(2024)[6] tudied the impact of the new economy on China's construction industry from multiple perspectives, and the results showed that the construction industry needs to accelerate its transformation and upgrading. Hongsheng (2024)[7] studied 31 provinces and cities in China and found that the digital economy has a significant promoting effect on the high-quality development of the construction industry. In terms of the interrelationship between regional economy and construction industry, He Li (2023)[8] believes that there is a close correlation between the two. To promote the development of the construction industry, it is necessary to consider the characteristics of regional economy and deepen the role of the construction industry in regional economy to drive regional economic growth. Therefore, regional economy and construction industry are interdependent and mutually reinforcing.

2 Research Method and Model

2.1 Correlation Analysis

When conducting correlation analysis, Pearson correlation coefficient is usually used to measure the linear relationship between two variables. The calculation formula for Pearson correlation coefficient is as follows:

$$r = \frac{\sum_{i=1}^{n}(x_i-\bar{x})(y_i-\bar{y})}{\sqrt{\sum_{i=1}^{n}(x_i-\bar{x})^2}\sqrt{\sum_{i=1}^{n}(y_i-\bar{y})^2}} \tag{1}$$

Among them, r is the correlation coefficient, x_i and y_i is the sample value, $\bar{x}$ and $\bar{y}$ is the average value, and n is the number of samples. The range of values r is [-1,1], and the closer the absolute value is to 1, the stronger the linear relationship;

The closer to 0, the weaker the linear relationship. By calculating the Pearson correlation coefficient and comparing it with the significance level, it is possible to determine whether the linear relationship between variables is significant.

2.2 Linear Regression Analysis

Regional economy is often composed of multiple factors, therefore, the ordinary least squares method in multiple regression is used to calculate the sum of squared minimum errors and find the optimal function. Solve the coefficients through matrix operation, and the calculation formula is:

$$\beta' = (X^T X)^{-1} X^T y = (\sum x_i x_i^T)^{-1} (\sum x_i y_i) \tag{2}$$

The β' estimated coefficient vector represents the independent variable matrix, X with each row representing an observation sample and each column corresponding to an independent variable. It X^T represents the transpose of the matrix, $(x_i x_i^T)^{-1}$ represents the inverse matrix, y is the dependent variable vector, and contains the dependent variable values of each observation sample.

2.3 Grey Relation Analysis Model

The calculation of grey correlation coefficient is based on the similarity of geometric shapes of sequence curves. Specifically, the calculation formula for the grey correlation coefficient is:

$$\zeta(k) = \frac{minmin|x_0(k)-x_i(k)|+\rho \cdot maxmax|x_0(k)-x_i(k)|}{|x_0(k)-x_i(k)|+\rho \cdot maxmax|x_0(k)-x_i(k)|} \tag{3}$$

Among them,$x_0(k)$ representing the mother sequence，$x_i(k)$ representative subsequence，ρ is the resolution coefficient, usually taken as 0.5. This formula is used to measure the degree of similarity between the parent sequence and the child sequence at various time points. The higher the degree of similarity, the greater the degree of correlation

3 Determination of Evaluation Indicators and Data Sources

3.1 Selection of Evaluation Indicators

In the Chengdu Chongqing Economic Circle, both Wanzhou and Fuling belong to Chongqing and are key areas for economic development; Luzhou and Yibin, on the other hand, both belong to Sichuan and are nodes of economic development. These four cities are relatively similar in terms of scale and economy, and construction is an important industry with sufficient representativeness. Therefore, these four cities in the Chengdu Chongqing Economic Circle were set as research objects, and a large amount of literature was consulted to accurately select 6 regional economic indicators

and 1 construction industry output value indicator as the evaluation basis. The specific content is shown in Table 1.

Table 1. Indicator Selection

Variable	Economic indicators	Source of indicators
Independent variable	Urban GDP (100 million yuan) Output value of the primary industry (100 million yuan) Output value of the secondary industry (100 million yuan) Output value of the tertiary industry (100 million yuan) Total urban import and export volume (100 million yuan) Total retail sales of consumer goods (100 million yuan)	Gu Linran(2022)[9] Su Limin(2022)[10] Yahong and Shu(2022)[11] Yan and Wenchang(2022)[12] Zhan Bin and Ni Rong (2021)[13] Liu Xiaojun and Wang Dongxu (2021)[14] Zhang Shihua and Huang Shuaijin (2018)[15] Wang Hongqiang and Guo Qiujing (2024)[16] Li and Huimin(2020)[17]
Dependent variable	Construction industry output value (100 million yuan)	

3.2 Source of Indicator Data

Based on the principles of representativeness, accuracy, and timeliness, the regional economic indicator data of the Chengdu Chongqing Economic Circle is taken from the official "Urban Statistical Yearbook (2019-2023)" of the four cities of Wanzhou, Fuling, Luzhou, and Yibin. During this process, a detailed comparison of statistical caliber was conducted on multiple data sources, and repeated verification was carried out to ensure the authenticity and effectiveness of the data. Intended to reveal the actual development status of the construction industry to the greatest extent possible, the descriptive statistical analysis results are shown in Table 2.

Table 2. Descriptive Statistics of Indicator Data

Regional economic indicators	Sample size	Minimum value	Maximum value	Average value	Standard deviation	Deviation median
Urban GDP (100 million yuan)	20.00	860.67	3427.84	1843.38	816.78	1699.96
Output value of the primary industry (100 million yuan)	20.00	65.30	395.96	186.19	109.99	156.13
Output value of the secondary industry (100 million yuan)	20.00	263.92	1723.21	889.63	462.35	903.98
Output value of the tertiary industry (100 million yuan)	20.00	407.49	1308.67	770.88	271.03	719.21
Total urban import and export volume (100 million yuan)	20.00	8.54	316.85	123.85	82.91	106.49
Total retail sales of consumer goods in society (100 million yuan)	20.00	338.20	1244.40	763.17	346.27	753.13
Construction industry output value (100 million yuan)	20.00	101.80	380.56	190.30	90.49	162.22

4 Empirical Analysis

4.1 Correlation Analysis

Before exploring the impact of regional economy on the output value of the construction industry, it is necessary to conduct a correlation analysis between the two. Analyzing the correlation between regional economic variables and the output value of the construction industry can help to better understand their internal connections and interaction mechanisms, which helps to clarify which regional economic indicators are more closely related to the output value of the construction industry, and provides clearer direction and basis for subsequent in-depth research. Firstly, the data is mapped to the *[0,1]* interval through range normalization to eliminate differences in units and magnitudes. Secondly, the commonly used Pearson correlation coefficient method is used to reflect the interrelationships and directions between variables. The calculation results are shown in Table 3.

Table 3. Correlation Coefficient Table

	Urban GDP	The output value of the primary industry	Output value of the secondary industry	The output value of the tertiary industry	Total urban import and export volume	Total retail sales of consumer goods	Construction industry output value
Urban GDP	1(0.000***)	0.979(0.000***)	0.972(0.000***)	0.951(0.000***)	0.762(0.000***)	0.951(0.000***)	0.604(0.005***)
Output value of the primary industry	0.979(0.000***)	1(0.000***)	0.909(0.000***)	0.983(0.000***)	0.657(0.002***)	0.932(0.000***)	0.513(0.019**)
Output value of the secondary industry	0.972(0.000***)	0.909(0.000***)	1(0.000***)	0.854(0.000***)	0.828(0.000***)	0.933(0.000***)	0.548(0.012**)
Output value of the tertiary industry	0.951(0.000***)	0.983(0.000***)	0.854(0.000***)	1(0.000***)	0.627(0.003***)	0.889(0.000***)	0.641(0.002***)
Total urban import and export volume	0.762(0.000***)	0.657(0.002***)	0.828(0.000***)	0.627(0.003***)	1(0.000***)	0.671(0.001***)	0.508(0.022**)
Total retail sales of consumer goods in society	0.951(0.000***)	0.932(0.000***)	0.933(0.000***)	0.889(0.000***)	0.671(0.001***)	1(0.000***)	0.342(0.140)
Construction industry output value	0.604(0.005***)	0.513(0.019**)	0.548(0.012**)	0.641(0.002***)	0.508(0.022**)	0.342(0.140)	1(0.000***)

Note: * * *, * *, * * represent significance levels of 1%, 5%, and 10%, respectively.

Overall, there is a significant correlation between various economic indicators in the Chengdu Chongqing Economic Circle region, and each indicator generally shows a strong correlation with the regional urban GDP. This indicates that the economic development of regional cities is closely related to the primary industry, secondary industry, tertiary industry, total import and export volume of hinterland cities, total

retail sales of consumer goods, and construction industry output value, with significant mutual influence.

From the perspective of the output value of the construction industry, the correlation with the total value of the tertiary industry is 0.641, indicating the strongest correlation. The construction industry can promote the development of service industries such as real estate, commerce, and trade logistics, and conversely, these industries can also bring more construction demand to them. The correlation with the GDP of inland cities is 0.604, indicating a strong correlation, suggesting that the development of the construction industry promotes GDP growth to a certain extent, and changes in its output scale have an impact on the overall economy. The correlation with the total value of the secondary industry is 0.548, indicating a strong correlation. As an important component of the secondary industry, the development of the construction industry can drive related industries and promote mutual development with industry sectors. The correlation with the total value of the primary industry is 0.513, indicating a strong correlation. For example, the construction industry can provide convenience for the development of the primary industry, which can also bring about a demand for production facilities. The correlation with the total import and export volume of inland cities is 0.508, indicating a strong correlation and suggesting that the construction industry has a certain indirect impact on import and export trade. The correlation with the total retail sales of consumer goods is 0.342, indicating that its correlation is not significant. This may be due to significant differences in industry characteristics and complex factors such as time lag. Therefore, this indicator is excluded and its impact relationship is further analyzed.

4.2 Linear Regression Analysis

Correlation analysis shows that there is a strong correlation between the regional economy of the Chengdu Chongqing Economic Circle and the output value of the construction industry. In order to better reveal the impact mechanism between the two, and further use multiple linear regression to analyze it. Due to the insignificant correlation between the total retail sales of consumer goods and the output value of the construction industry, it was excluded. Regression analysis was conducted on the output value of the construction industry through five indicators: urban GDP, output value of the primary industry, output value of the secondary industry, output value of the tertiary industry, and total import and export value of the city. Calculate using SPSS, as shown in Table 4. And plot the fitting effect between the data and the model, as shown in Figure 1.

Table 4. Results of Linear Regression Analysis

	Nonstandardized coefficient		Standardiz-ation coefficient	t	P	R^2	Adjust R^2	F
	B	Standard error	Beta					
Constant	0.041	0.16	-	0.253	0.402	0.969	0.954	F=66.987
Urban GDP (X1)	0.332	3.217	0.325	0.1030.044**				P=0.000***

	Nonstandardized coefficient		Standardiz-ation coefficient	t	P	R^2	Adjust R^2	F
	B	Standard error	Beta					
Output value of the primary industry (X2)	0.621	0.661	0.637	0.941	0.078*			
Output value of the secondary industry (X3)	2.036	1.821	1.987	1.118	0.045**			
Third industry output value(X4)	1.870	1.165	1.733	1.605	0.038**			
Total urban import and export volume (X5)	0.431	0.138	0.357	3.125	0.066*			

Dependent variable: Construction industry output value (Y)

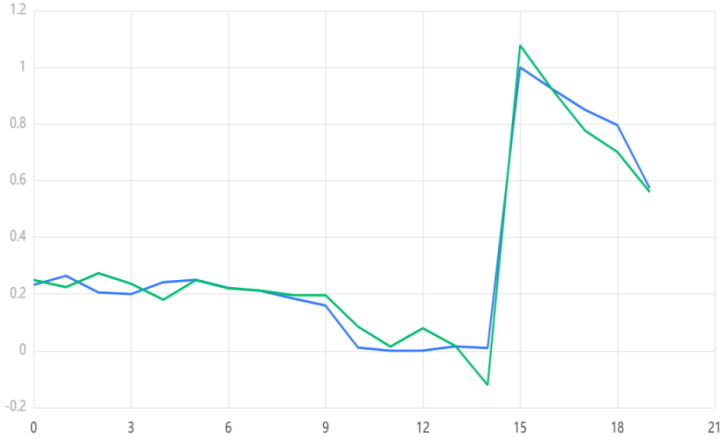

Fig. 1. Data and model fitting effect diagram

Firstly, the model passed the F-test (F=66.987, p=0.000<0.05), indicating that at least one independent variable has an impact on the dependent variable. Secondly, the R^2 value of the model fitting is 0.969, indicating a very high degree of fit. The R-squared value is 0.969, indicating that the independent variable can explain 96.9% of the change in the dependent variable. Finally, the p-values corresponding to the regression coefficients of each indicator are all less than 0.10, indicating a certain impact on the output value of the construction industry. The regression model formula is: Y=0.041+0.332X1+0.621X2+2.036X3+1.870X4+0.431X5.

The degree of impact is as follows: the regression coefficient of the output value of the secondary industry is 2.036, which has a significant positive impact on the output of the construction industry; The regression coefficient of the output of the tertiary industry is 1.870, which has a significant positive impact on the output of the construction industry; The regression coefficient of the output of the primary industry is 0.621, which has a significant positive impact on the output of the construction industry; The regression coefficient of the total import and export volume is 0.431, which has a significant positive impact on the output value of the construction industry; The

regression coefficient of urban GDP is 0.332, which has a significant positive impact on the output value of the construction industry.

4.3 Grey Correlation Analysis

In order to further reveal the relationship between the two, the grey relational analysis method is adopted for further research, as it focuses more on analyzing the characteristics of dynamic systems and avoids the errors that may arise from the correlation analysis of static research. In addition, the research results of regression analysis can be supplemented and verified, or weak or nonlinear relationships that may be concealed in regression analysis can be discovered. Using Matlab software for calculation, the results are shown in Table 5.

Table 5. Correlation results

Evaluative items	Correlation	Ranking
Output value of the secondary industry (X3)	0.626	1
Output value of the third industry(X4)	0.609	2
Output value of the primary industry (X2)	0.603	3
Total urban import and export volume (X5)	0.584	4
Urban GDP (X1)	0.572	5

Overall, the results of grey relational analysis and regression analysis are highly consistent, effectively demonstrating the reliability of the research findings. The data shows that the grey correlation between various economic indicators and the construction industry is in the range of 0.572 to 0.626, which fully demonstrates the existence of a certain degree of correlation between these factors.

Among them, the correlation between the output value of the secondary industry (X3) and the construction industry is the most significant, reaching 0.626, ranking first. This clearly indicates that in the specific context of the current analysis, the development of the secondary industry has a relatively significant impact on the construction industry, further confirming that the economic development of the region largely depends on the good performance of the secondary industry.

The correlation of the output value of the tertiary industry (X4) is 0.609, ranking second. This result confirms that the tertiary industry also has a significant impact on the construction industry. With the continuous development of the economy, the proportion of the tertiary industry in the national economy is gradually increasing, and its close relationship with the construction industry fully reflects the important position of the service industry in the economic structure.

The correlation between the output value of the primary industry (X2) is 0.603, ranking third. Although the correlation of the primary industry is slightly lower than that of the secondary and tertiary industries, it still has a certain influence. This indicates that as a fundamental industry, the development status of agriculture will also

have a certain impact on the construction industry, especially in high agricultural production areas, where this impact is more prominent.

The correlation between the total import and export volume of the city (X5) is 0.584, ranking fourth. The correlation between import and export trade and the construction industry shows that foreign trade activities have a certain driving effect on the economic development or specific aspects of the region. The level of activity in import and export trade may have an impact on the economic scale and industrial structure of a city.

The correlation of urban GDP (X1) is 0.572, ranking fifth. As a comprehensive economic indicator, the correlation between urban GDP and the construction industry is relatively low, which may be due to the combined effects of multiple factors and the complex relationships between these factors.

5 Problem Analysis and Countermeasures Suggestions

5.1 Problems in the Construction Industry

Based on correlation analysis, regression analysis, and grey relational analysis, combined with reality, analyze the development issues of the construction industry in the Chengdu Chongqing Economic Circle:

Initially, the regional economic situation is good, and the requirements for the construction industry are increasing. The correlation coefficient between the output value of the construction industry and regional urban GDP is 0.604, which is relatively weak. This indicates that although the construction industry has played a driving role in the regional urban economy in recent years, its influence is no longer dominant, and other factors in the regional economy are more crucial in driving GDP. This reflects the limitations of the development of the construction industry, which cannot keep up with economic demand and reduces its contribution. It also indicates that the regional economic structure may be unbalanced, overly relying on a few industries, and the potential of other industries is not fully realized. It also suggests that the construction industry faces challenges in competition, fails to effectively integrate resources and enhance competitiveness, and affects its leading role. To achieve high-quality development, it is urgent to optimize and upgrade the construction industry, reshape its position as a pillar industry, and contribute to regional development.

Secondly, the development of the construction industry is slow, and the industrial structure needs to be optimized. The output value of the construction industry is a component of the secondary industry, but it has a higher correlation with the output value of the tertiary industry and urban GDP. It has exposed the insufficient driving force of the secondary industry on the production of the construction industry, and the unreasonable industrial structure has caused fluctuations in its correlation with the construction industry. Tracing back to the original data is because in the proportion of the secondary industry in the Chengdu Chongqing Economic Circle, industry plays a dominant role, and its impact far exceeds that of the construction industry. From a practical perspective, within the Chengdu Chongqing Economic Circle, due to changes in its industrial structure, the tertiary industry currently has a relatively large pro-

portion in the entire regional economy, and its contribution and influence on GDP are also more prominent. In contrast, the development of the construction industry is relatively stable and faces certain transformation and adjustment, and its direct correlation with the secondary industry is not as obvious as other industries.

Lastly, the construction industry is experiencing business contraction and fierce competition in the industry. The output value of the construction industry in the Chengdu Chongqing Economic Circle has not increased significantly among the four cities in the past five years and has tended to stabilize. At present, China's real estate market has entered the "stock era", which has affected the business of the construction industry and led to a decreasing economic activity. The reduction of projects has led to fierce competition in the construction industry, facing problems such as tight financing, shrinking scale, and narrowing efficiency. The prominent problems include price pressure, advance payment, and arrears. Some enterprises blindly bid at a low price and recklessly take on projects. During the construction process, there are chaos such as advance payment of project funds, signing negative and positive contracts, and arrears of wages for migrant workers, which seriously affects the healthy and orderly development of the construction industry market.

5.2 Industry Countermeasures and Suggestions

Based on regression analysis results and development issues, combined with reality, propose countermeasures and suggestions for the development of the construction industry in the Chengdu Chongqing Economic Circle:

Firstly, increasing the openness of the construction industry and promote the flow of production factors. The coefficient of influence of import and export trade volume in the Chengdu Chongqing Economic Circle on the output value of the construction industry is 0.431, indicating a certain impact. As a result, import and export trade may bring about increased investment and construction demand, thereby promoting the development of the construction industry. For example, more industrial plants, logistics facilities, and infrastructure projects will also attract more foreign investment to enter, in order to promote the increase of the construction industry's output value. At the same time, the government needs to accelerate the implementation of the "going global" development policy for the construction industry, encourage construction enterprises to actively participate in international engineering contracting and labor cooperation, fully expand overseas markets, and promote the free flow of production factors in the construction industry. Specifically, based on the different characteristics of cities, demonstration zones for open cooperation in the construction industry can be established to concentrate resources and create models, attract advanced domestic and foreign construction enterprises and technologies to settle in, and form a agglomeration effect.

Secondly, Strengthening industrial collaboration and formulating stimulus policies. The coefficient of influence of the secondary industry in the Chengdu Chongqing Economic Circle on the output value of the construction industry is 2.036, but it is dominated by industry. Strengthen the industrial synergy between industry and construction, and encourage industrial enterprises to prioritize cooperation with regional

construction enterprises in projects such as construction, expansion, and renovation of industrial parks. At the same time, we will promote the integration of advanced industrial technologies with the construction industry, such as the research and application of new building materials, and the practice of intelligent construction technology, to achieve collaborative progress between the two. The coefficient of influence of the tertiary industry in the Chengdu Chongqing Economic Circle on the output value of the construction industry is 1.870, which is significant. Mainly influenced by the real estate service industry in the tertiary sector. Stimulating the real estate market to promote the development of the construction industry, by reducing the down payment ratio and loan interest rates, relaxing purchase restrictions, and providing housing subsidies to release the pressure of purchasing houses, providing discounts to promote the development of the rental market and increase supply, thereby stimulating the upstream real estate market and bringing opportunities to the construction industry. For example, in a specific area, the down payment ratio can be reduced to 20%, the loan interest rate can be discounted by 10%, and the housing subsidy can be given at a standard of 500 yuan per square meter based on the housing area.

Thirdly, Promote the linkage between the economy and the construction industry, accelerate the transformation of the construction industry. The coefficient of the impact of the GDP of cities in the Chengdu Chongqing Economic Circle on the output value of the construction industry is 0.332, which is significant. On the one hand, relying on the "Outline of the Chengdu Chongqing Economic Circle Construction Plan", the continuous rise of urban GDP in recent years has driven the increase of construction industry output value, creating more market demand for the construction industry. Based on this, development goals and task decomposition plans for the construction industry that are linked to urban GDP growth can be formulated. For example, when the city's GDP grows by 5%, specific growth indicators for the construction industry in infrastructure, commercial real estate, and residential projects should be specified. On the other hand, national strategies and development needs will lead to higher requirements and standards for the construction industry, which will prompt construction enterprises to accelerate their transformation and upgrading towards high-quality, high-efficiency, and sustainable development. Specifically, this can be focused on prefabricated buildings and building energy conservation and emission reduction, as well as the establishment of construction industry transformation and upgrading service centers to provide one-stop services such as technical consulting, talent training, and market promotion for enterprises.

In addition, other measures should not be ignored. On the one hand, establish a sound talent training system. Talents are the key to driving the development of the construction industry. We should strengthen cooperation with universities and vocational colleges, jointly develop talent training programs that meet practical needs, and offer cutting-edge courses such as BIM technology and intelligent construction. Establish internship bases and industry university research cooperation platforms to provide students with practical opportunities, and enterprises can also use this opportunity to select talents. At the same time, attention should be paid to continuing education for in-service personnel, regular training should be organized, expert lectures should be invited, and professional level and comprehensive quality should be im-

proved. On the other hand, developing green building standards and incentive mechanisms. Green buildings are the future direction, and evaluation standards covering the entire lifecycle should be developed to assess and determine the level of buildings from multiple perspectives. Establish incentive mechanisms and provide policy support, such as priority treatment for planning approval, land transfer, tax incentives, etc; Establish special funds to subsidize and reward green building projects. Enhance social awareness and recognition of green buildings through publicity and promotion.

6 Conclusion

This article selects four cities in the Chengdu Chongqing Economic Circle, namely Wanzhou, Fuling, Luzhou, and Yibin, and conducts research on the impact of regional economy on the output value of the construction industry through correlation analysis and linear regression analysis. The research results indicate that there is a significant strong correlation between the regional economy of the Chengdu Chongqing Economic Circle and the output value of the construction industry, with the secondary and tertiary industries having the most prominent impact on the output value of the construction industry. Based on this, countermeasures and suggestions are proposed to increase the opening up of the construction industry, promote national strategies, promote industrial upgrading, and accelerate industry transformation, improving the talent cultivation system and formulating green building standards and incentive mechanisms. Currently, construction companies need to be down-to-earth and turn risks into opportunities, such as actively participating in trade cooperation, strengthening collaboration with industry, paying attention to the real estate market and transforming, leveraging the support of the hinterland economy to enhance competitiveness, and contributing to regional development.

References

1. Chongqing Development and Reform Commission (2024) "Background, construction achievements, and prospects of the Chengdu Chongqing dual city economic circle".
2. Li Qiangsheng (2024) "Building the Chengdu Chongqing Economic Circle, State owned Enterprises Strive to Be the Pioneer." Urban Development (04): 108-109.
3. Jin Minqiu (1986) "Exploration of the Construction Industry as a Pillar Industry of the National Economy." Management World (4): 9.
4. Duan Zongzhi and Jiang Wei (2021) "Research on the Impact of Construction Industry Development on Regional Economy." Journal of Huaiyin Institute of Technology.
5. Cai Binqing and Liu Yuanfang (2010) "Research on the Impact of Construction Industry Development on Regional Economic Growth: Based on Panel Data Analysis of 31 Provinces and Cities in China." Construction Economy (09): 5-8
6. Anning, C. 2024. Research on the Impact of the New Economy on the Transformation and Upgrading of the Construction Industry.
7. Hongsheng, K. 2024. Analysis of the Impact of the Digital Economy on the High Quality Development of the Construction Industry Journal of Engineering Management.

8. He Li (2023) "How the development of the construction industry under the" dual carbon "target affects regional economy." Chinese businessman (10): 76-77.
9. Linran, G. 2022. Spatial statistical analysis of economic growth and engineering planning level in the construction industry Industrial Building, 52, I0005-I0005.
10. Limin, S. 2022. Construction of an Evaluation Index System for High Quality Economic Development Statistics and Decision Making, 36-40.
11. Yahong, F. and Shu, C. 2022. Research on Performance Evaluation of Green Economy in the Construction Industry Building Economics, 43, 93-101.
12. Yan, S. and Wenchang, L. 2022. Evaluation of High Quality Development in the Construction Industry: A Case Study of Liaoning Province Building Economics, 43, 32-36.
13. Zhan Bin and Ni Rong (2021) "Research on the Collaborative Development of Logistics and Regional Economy in Beibu Gulf Port of Guangxi." Water Transport Management 43 (6): 4.
14. Liu Xiaojun and Wang Dongxu (2021) The coordinated development of China's construction industry and regional economy. Industrial architecture.
15. Zhang Shihua and Huang Shuaijin (2018) "Measurement and Differential Analysis of Economic Development Level in Chengdu Chongqing Economic Zone." Journal of Chengdu University: Social Sciences Edition (2): 8.
16. Wang Hongqiang and Guo Qiujing (2024) Research on Measurement of Coordinated Development of Construction Industry Urbanization Economy - Empirical Analysis Based on Data from 31 Provinces in China. Management Modernization.
17. Li, W. and Huimin, L. 2020. Measurement and Path Selection of High Quality Development Level in the Construction Industry: A Case Study of Shaanxi Province Building Economics, 41, 24-28.