

# Research on the Coupling between Localized Employment of Urban College Graduates and Urban Economic Development: A Case of City R in China

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## Abstract

[Purpose] This paper focuses on quantifying the coupling value of the relationship between the localized employment of urban college graduates and the urban economic development, with a view to providing a reference for the scientific formulation of talent policies for small and medium-sized cities.

[Methodology] For this purpose, We adopted an anatomical sparrow-style research methods, chose China's city R as the research object, and conducted a comparative analysis of the coupling relationship among urban population growth, localized employment of urban college graduates and urban economic.

[Findings] In this study, we found that the coupling value between localized employment of urban college graduates and urban economic development has a relatively high correlation, the coupling value between urban resident population growth and urban economic development has a medium correlation.

[Implications] Local governments should pay attention to the development of urban higher education and formulate better employment policies to enhance the localized employment rate of urban college graduates.

## Keywords

*Urban Economic Development, Localized Employment, Coupling, Urban College Graduates*

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## I . Introduction

The relationship between urban population growth and urban economic development is an eternal topic in the process of urban development (Schultz, 1971; Erum and Shazia, 2022). The relationship between urban population growth and urban economic development is mutual; urban population growth provides impetus for urban economic development, driving urban economic growth, and in turn, urban economic development exerts an attractive force on urban population growth (Yu Tingting et al., 2018). Within the structure of urban population growth, because the talents is the primary resource for socioeconomic development, the talent aggregation plays a more prominent role in the urban economic development of a city, which became an important indicator for measuring the overall competitiveness of a region (ZHANG Bo, 2017). However, urban talent aggregation is greatly influenced by urban talent policies (Li Kang et al., 2021). Therefore, each city is actively developing its own talent policy to promote urban talent aggregation. Along with the trend of urban talent policy development in large – sized cities in China, small and medium – sized cities are also actively developing their own urban talent policies and anchoring their policy measures to those of large and medium – sized cities, focusing more on the introduction of high – level talents. However, small and medium – sized cities and large – sized cities have a difference in the stage of economic development, which leads to the fact that talents of different levels and categories play different roles in the urban economic development of small, medium and large – sized cities. Therefore, small and medium – sized cities should formulate urban talent policies that are adapted to their own stage of urban economic development.

Urban colleges graduates in local cities, as an important talent cluster for urban economic development, are an important force influencing urban economic development. Therefore, the formation of a “localized employment population of urban college graduates” has also become one of the important functions of urban higher education in serving urban economic development (Romer, 1989; Marcin, 2021; Wu Weiwei, 2021). Both in terms of the stage of economic development of small and medium – sized cities and in terms of the level of knowledge of urban college graduates about the urban economic development, local governments of small and medium – sized cities should pay attention to the important role of local colleges and universities in the cultivation of “urban college graduates of localized employment population”, and through the formulation of scientific and comprehensive urban talent policy, pay attention to both “high attraction” and “high employment”. By formulating scientific and comprehensive urban talent policies, they should pay attention to both the “introduction of high – level talents” as well as the “aggregation of ordinary college graduates”, and actively improve the localized employment rate of urban college graduates. However, there are

relatively few studies on the relationship between localized employment of urban college graduates and urban economic development in small and medium-sized cities, and there is a lack of necessary basis and reference for the scientific and comprehensive formulation of urban talent policy for small and medium-sized cities. Based on this, this study takes R city, one of the small and medium-sized cities in China, as a specific research object, and quantitatively analyzes the coupling value of the relationship between the localized employment of urban college graduates and urban economic development in R city, with a view to providing reference for the scientific and comprehensive formulation of urban talent policies in R city and other similar small and medium-sized cities in China, as well as providing valuable suggestions for them.

## II. Theoretical traceability

There are relatively few studies on the relationship between localized employment of graduates of local universities and local economic development, and most of the related studies focus on the relationships between higher education and economic benefit growth or between higher education and the transformation of economic growth mode.

In the studies of the relationship between localized employment of local college graduates and local economic development, Jiang Wei (2021) studied the relationship between localized employment of graduates from higher vocational colleges and urban economic development in R city, and concluded that higher vocational colleges promote the urban economic development of R city by cultivating high-quality technical and skilled talents; Shan Wenjuan (2021) studied the relationship between localized employment of local college graduates and local economic development from the perspective of the impact of regional economic development on the localized employment of local college graduates, and concluded that the urban economic development and the employment flow guidance are particularly important to the attractiveness of localized employment of local college graduates. Chen Yue and Jiang Jiaqiong (2022) argued from the perspective of vocational education and its impact on regional economic development, highlighting that vocational education can cultivate specialized talent, promote technological development, and serve various industries directly, which influences regional economic development.

In the studies on the relationship between higher education and economic benefit growth, Schultz's human capital theory clearly articulated the significant promoting role of educational investment in economic benefit growth, and demonstrated that the returns from educational investment accounted for

70% of the overall labor income growth (Schultz, 1971); Florida, et al. (2008) also found that the economic benefits generated through investment in education, particularly through higher education in the development of highly qualified personnel, are much higher than the benefits endowment of other traditional factors; Luo Bei (2011) pointed out that the industrial structure of regional economic development requires a corresponding discipline structure, and local higher education institutions can provide manpower support to businesses through talent cultivation, driving local economic development; In the study of the relationship between higher education systems and regional economic development in Europe, Alice et al. (2022) found that the most important factors for regional economic development are the size of higher education systems, the internationalisation of the students and research productivity; Xie Fang (2023) also recognized that one of the fundamental functions of local higher education is to serve society, and local economic and social development requires the support of human resources from local universities, especially regional institutions; Regarding the transformation of urban economic growth, FU Tao (2016) believes that the key for cities to achieve innovation drive is talent, and the key for the transformation and upgrading of urban industries is also talent, and the key issue that local governments need to address is to improve the quantity, quality and optimize the structure of talent, which requires that the urban workforce should have new skills and new knowledge.

However, some scholars have noted that the relationship between local higher education and regional economic development does not always consistently align in terms of change and development direction, and considered that the coupled and coordinated development between local higher education and local economic development is the most critical (Qin Yishan, 2023). Wang Yiran, et al. (2023) studied the interaction mechanism and coupling Strategy of higher education, scientific and technological innovation ability and regional economy, and found that higher education and technological innovation capabilities have significant promoting effects on regional economic development, and exhibit heterogeneity among different regions; Schulze and Kleibert (2021) studied the strategic coupling of Malaysia and Singapore's transnational education and global higher education oriented towards regional economic development; Zhou Qiliang (2022) studied the impact of the coupling degree between higher education and industrial structure on employment structure, and found that the positive impact of the coupling degree on employment structure in eastern cities is more prominent with the expansion of the city scale, while it has a significant positive impact on the employment structure of super-large cities in the central and western regions, but it has a negative impact which decreases with the expansion of city scale on employment structure of the small, medium and large cities in the central and western regions.

Through theoretical tracing, we find that there is a relatively obvious correlation between higher

education and economic development, and the coupling has been applied to the study of the relationship between higher education and economic development, which lays the theoretical research foundation for this study. However, we also find that there are relatively few studies on the relationship between localized employment of local college graduates and local economic development, and there is no quantitative research on the coupling degree between the localized employment of local college graduates and local economic development.

### III. Coupling Measurement

In this study, We adopted an anatomical sparrow – style research methods, and chose the city R in China as a research object to conduct a comparative analysis of the coupling between the resident population growth, the localized employment of local college graduates and urban economic development. The specific research is primarily divided into four steps, the first step is the construction of the indicator system, the second step is the determination of data sources, the third step is the establishment of research methods, and the forth step is the measurement of coupling degree.

#### 3.1 Construction of the indicator system

To comprehensively and comparatively verify the coupling between the localized employment of local college graduates and local economic development, we divides the data indicator system into demographic change indicators and economic development indicators. The demographic change indicators include the indicators of change in resident population and the indicators of changes in the localized employment population of local college graduates; the economic development indicators include indicators of economic development and indicators of industrial development., as shown in Table 1.

〈Table 1〉 Demographic Change Indicators and Economic Development Indicators

Indicator category	Type of indicator	Content of the indicators
Population change Indicators	Local resident population	2012–2022 Local resident population growth rate ( $X_1$ )
		2018–2022 Local resident population growth rate ( $X_2$ )
	Localized employment population of local college graduates	2019–2022 Localized employment rate of local college graduates ( $X_3$ )
Economic Development Indicators	Economic development rate	2012–2022 GDP growth rate ( $Y_1$ ). GDP per capita growth rate ( $Y_2$ ). Fixed investment growth rate ( $Y_3$ ). Growth rate of total retail sales of consumer goods ( $Y_4$ ). Local revenue growth rate ( $Y_5$ ) ;
		2019–2022 GDP growth rate ( $Y'_1$ ). GDP per capita growth rate ( $Y'_2$ ). Growth rate of total retail sales of consumer goods ( $Y'_3$ ). Local revenue growth rate ( $Y'_4$ ). Fixed investment growth rate ( $Y'_5$ ).
	Industrial development Rate	2012–2022 Growth rate of industrial value added ( $Y_6$ ). Growth rate of value added in services ( $Y_7$ ) ; 2019–2022 Growth rate of industrial value added ( $Y'_6$ ). Growth rate of value added in services ( $Y'_7$ ).

### 3.2 Determination of data sources

Based on the constructed indicator system, the data for this study mainly come from the R City Statistical Yearbook for previous years and the Annual Analysis Report on Employment Quality of R City University Graduates from the S Province Higher Education Graduates Employment Information Network. Due to data availability and the development history of R City, the indicators for the resident population and economic development cover the years 2008 to 2018, as shown in Table 2. The indicators for the localized employment for local college graduates, data were collected for the recent four years from 2015 to 2018. Due to variations in data collection among different universities and to maintain research rigor, this study only used employment data from the four main universities among the seven in R City, as shown in Table 3.

(Table 2) Resident Population Data and Economic Development Data of City R

Period	Resident population (million)	Annual Growth Rate(%)	GDP (100million RMB)	Annual Growth Rate(%)	GDP per capita (RMB)	Annual Growth Rate(%)	industrial added value(100million RMB)	Annual Growth Rate(%)
2008	274.09	9.2	773.14	15.1	28300	14.5	419.73	17.5
2009	275.75	6.1	861.67	14.1	31343	13.4	479.46	18.6
2010	280.11	15.8	1025.08	12.5	36883	11.3	561.55	12.9
2011	281.89	6.4	1214.07	12.1	43205	10.9	660.66	13.5
2012	283.43	5.5	1352.57	11.8	47851	11.1	724.06	12.6
2013	285.05	5.7	1500.16	10.6	52778	10.0	784.33	10.7
2014	287.05	7.0	1611.87	10.0	56349	9.3	811.39	9.6
2015	288	3.3	1670.80	7.5	58110	6.9	813.06	8.0
2016	290.11	7.3	1802.49	8.1	62358	7.5	851.94	8.0
2017	291.65	5.3	2002.65	9.0	68848	8.3	963.48	9.4
2018	293.03	4.7	2202.17	7.3	75329	6.8	1064.22	6.8

Data source: Statistical Yearbook of City R.

(Table 2) Resident Population Data and Economic Development Data of City R (Continued)

period	Value added of services (100million RMB)	Annual Growth Rate(%)	Total retail sales of consumer goods (100million RMB)	Annual Growth Rate(%)	Local revenues (100million RMB)	Annual Growth Rate(%)	fixed investment (100million RMB)	Annual Growth Rate(%)
2008	270.67	15.1	212.36	23.3	36.33	25.4	518.43	26.4
2009	294.88	10.9	252.87	19.1	43.48	19.7	631.86	23.1
2010	363.27	14.3	311.63	18.6	55.61	27.9	775.36	22.4
2011	441.33	12.2	365.44	17.3	68.50	23.2	880.69	23.7
2012	510.87	12.5	420.10	15.0	78.86	15.1	922.38	20.2
2013	584.38	12.1	476.20	13.4	100.09	15.5	1069.05	20.0
2014	660.64	12.0	535.98	12.6	111.07	11.0	1234.75	15.5
2015	717.14	7.4	603.87	10.3	121.65	9.5	1407.81	14.0
2016	803.58	8.9	660.09	9.3	128.73	10.6	1597.78	13.5
2017	888.94	9.4	720.29	9.1	141.33	12.3	1691.19	9.5
2018	971.50	8.5	774.10	7.5	160.00	13.0	1797.70	6.3

Data source: Statistical Yearbook of City R.

〈Table 3〉 Localized employment Data of 4 colleges and universities in City R

period	Graduates from A University			Graduates from B University			Graduates from C College			Graduates from College			total		
	Graduates Population	Localized Employment Rate(%)	Localized Graduates Population	Graduates Population	Localized Employment Rate(%)	Localized Graduates Population	Graduates Population	Localized Employment Rate(%)	Localized Graduates Population	Graduates Population	Localized Employment Rate(%)	Localized Graduates Population	Graduates Population	Localized Employment Rate(%)	Localized Graduates Population
2015	5488	7.92	435	3886	4.09	159	5399	50.04	2621	3914	3.15	123	18687	17.86	3338
2016	5618	13.84	778	4249	2.20	93	4974	31.01	1516	3683	12.33	454	18524	15.34	2841
2017	5617	15.25	857	4505	1.82	82	6071	31.98	1911	4145	11.79	489	20338	16.41	3338
2018	5550	22.22	1233	4226	3.06	129	5647	33.33	1851	5123	18.67	956	20546	20.30	4170

Source: Annual Analysis of Employment Quality of Graduates



### 3.3 Establishment of research methods

The concept of coupling has been applied mainly in the field of electrical, which refers to the relationship between two things that interact and influence each other (Zhang Wang et al., 2013). With the depth and expansion of researches, the concept of coupling has been continuously applied to studies related to urban economic development and the urbanization process (Xin Hong, 2023; YANG Wei-li et al., 2021), and was later introduced into the study of the relationship between higher educational and economic development (Wang Yiran, et al., 2023; Schulze M P and Kleibert J M, 2021; Zhou Qiliang, 2022).

In this study, we analyze the coupling relationship between the growth rate of resident population and urban economic development and the coupling relationship between the localized employment rate of local colleges graduates and urban economic development of City R by constructing a gray correlation model and a coupling model.

- (1) Selection of analyzed indicator sequences. We selected four sequences of analytical indicators for this study: indicators of resident population growth rate ( $X_1$  and  $X_2$ ), indicators of localized employment rate of local college graduates ( $X_3$ ) and indicators of economic development ( $Y_k$  and  $Y'_k$ ).
- (2) Data Normalization. Given the similarity in data dimensions and magnitudes, each value within the respective sequences has been standardized by mean – centering. However, due to variations in the time periods for data collection concerning resident population and the localized employment rate of local university graduates, this study has independently selected economic development indicators based on the specific time periods for resident population and localized employment rates. the resulting data series are  $X_1^i$ ,  $X_2^j$ ,  $X_3^j$ ,  $Y_k^i$  and  $Y'_k{}^j$ , after normalization,  $X_1^i$  represents the resident population growth rate at time point i,  $Y_k^i$  represents the growth rate of the kth economic development indicator at the time point i;  $X_2^j$  represents the growth rate of the local resident population at time point j,  $X_3^j$  represents the localized employment rate of college graduates at time point j,  $Y_k^i$  represents the growth rate of the kth economic development indicator at the time point i.  $Y'_k{}^j$  represents the growth rate of the kth economic development indicator at time point j.
- (3) Difference series for data. The difference series is mainly divided into  $\{X_1^i - Y'_k{}^i\}$  between the indicator of the growth rate of the resident population of R and the indicator of the growth rate of economic development in 2008 – 2018,  $\{X_2^j - Y'_k{}^j\}$  between the indicator of the growth rate

of the resident population of R and the indicator of the growth rate of economic development in 2015–2018 and  $\{X_3^j - Y_k^j\}$  between the indicator of the localized employment rate of local college graduates and the indicator of the growth rate of economic development in 2015–2018.

(4) Calculation of correlation coefficient. The Dunn's correlation coefficient method is used to calculate the correlation coefficients  $\eta_1^{ik}$ ,  $\eta_2^{jk}$ ,  $\eta_3^{jk}$  A, B, C, as shown in equations (5), (6) and (7) :

$$\eta_1^{ik} = \frac{\min\{|X_1^i - Y_k^i|\} + \rho \max\{|X_1^i - Y_k^i|\}}{|X_1^i - Y_k^i| + \rho \max\{|X_1^i - Y_k^i|\}} \quad (5)$$

$$\eta_2^{jk} = \frac{\min\{|X_2^j - Y_k^j|\} + \rho \max\{|X_2^j - Y_k^j|\}}{|X_2^j - Y_k^j| + \rho \max\{|X_2^j - Y_k^j|\}} \quad (6)$$

$$\eta_3^{jk} = \frac{\min\{|X_3^j - Y_k^j|\} + \rho \max\{|X_3^j - Y_k^j|\}}{\|X_3^j - Y_k^j\| + \rho \max\{\|X_3^j - Y_k^j\|\}} \quad (7)$$

In the equations,  $\tilde{n}$  is a resolution factor to control the effect of  $\tilde{n}\Delta_{\max}$  on the change of values, which is generally taken as 0.5.

### 3.4 Measurement of coupling

The matrix of correlation coefficients obtained from Equation (5) is used to calculate the coupling  $\delta_1^{ik}$  c between the indicator of resident population growth rate  $X_1$  and the indicator of economic development  $Y_k$  according to the sample size m, the matrix of correlation coefficients obtained from Equation (6) is used to calculate the coupling  $\delta_2^{jk}$  f between the indicator of localized employment rate of local college graduates  $X_2$  and the indicator of economic development  $Y_k$  according to the sample size n, and the matrix of correlation coefficients obtained from Equation (7) is used to calculate the coupling degree f between the indicator of localized employment rate of local college graduates and the indicator of economic development according to the sample size n. The coupling degree  $\delta_3^{jk}$  between the indicator of localized employment rate of graduates of local universities an  $X_3$  d the indicator of economic development  $Y_k$  is calculated for the matrix of correlation coefficients obtained from equation (7) according to the sample number n, as shown in equations (8), (9) and (10).

$$\delta_1^{ik} = \frac{1}{m} \sum_{i=1, k=1}^m \eta_1^{ik} \quad (8)$$

$$\delta_2^{jk} = \frac{1}{n} \sum_{j=1, k=1}^n \eta_2^{jk} \quad (9)$$

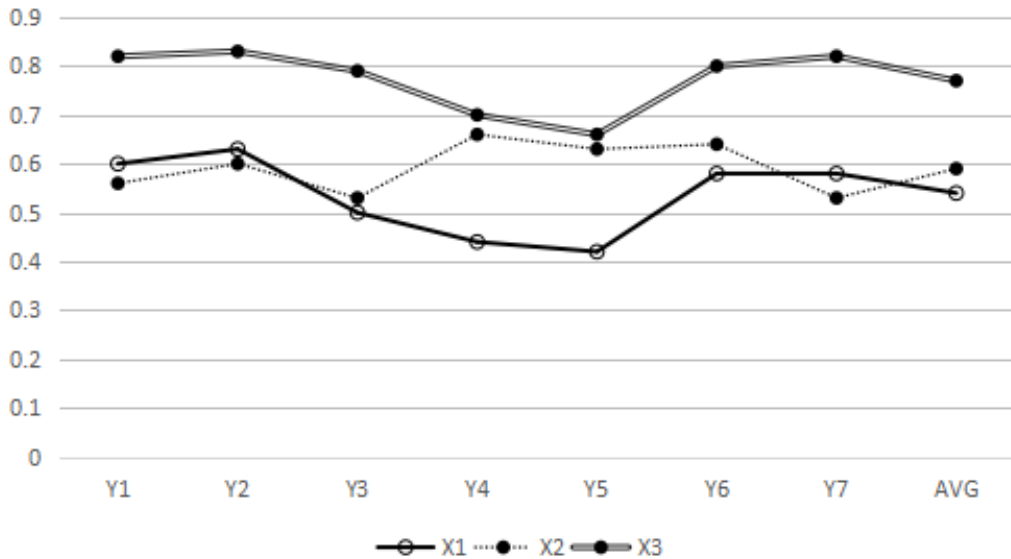
$$\delta_3^{jk} = \frac{1}{n} \sum_{j=1, k=1}^n \eta_3^{jk} \quad (10)$$

The measured results of the coupling between the growth rate of the resident population, the localized employment rate of college graduates and the growth rate of economic development in City R are calculated as shown in Table 4 and Figure 1.

〈Table 4〉 Coupling between urban resident population growth, localized employment of urban college graduates and economic development growth of R city

Indicators of Economic growth  Indicators of population growth	Urban GDP (Y <sub>1</sub> )	GDP per capita (Y <sub>2</sub> )	Total consumption of social retail goods (Y <sub>3</sub> )	Urban revenue (Y <sub>4</sub> )	Urban Fixed Investment (Y <sub>5</sub> )	Urban Industry value added (Y <sub>6</sub> )	Urban Service Value added (Y <sub>7</sub> )	A VG Value
Growth rate of general urban population in city R from 2008 – 2018 (X <sub>1</sub> )	0.60	0.63	0.50	0.44	0.42	0.58	0.58	0.54
Growth rate of general urban population in city R from 2015 – 2018(X <sub>2</sub> )	0.56	0.60	0.53	0.66	0.63	0.64	0.53	0.59
Localized employment rate of urban college graduates in city R from 2015 – 2018 (X <sub>3</sub> )	0.82	0.83	0.79	0.70	0.66	0.80	0.82	0.77

〈Figure 1〉 Coupling between growth rate of resident population, localized employment rate of urban college graduates and growth rate of economic development of R city



As shown in Table 4 and Figure 1, the coupling value  $\delta$  takes the value range of  $0 < \delta \leq 1$ , when  $\delta$  is bigger, it indicates that the correlation between the two indicators is higher; if  $\delta$  takes the value range of  $0.85 < \delta \leq 1$ , it indicates that the correlation between the two indicators is high, and the change between the indicators is almost the same; if  $\delta$  takes the value range of  $0.65 < \delta \leq 0.85$ , it indicates that the correlation between the two indicators is relatively high, and the coupling between the indicators is strong; if  $\delta$  takes the value range of  $0.35 < \delta \leq 0.65$ , it indicates that the correlation between the two indicators is medium, and the coupling between the indicators is medium; if  $\delta$  takes the value range of  $\delta < 0.35$ , it indicates that the correlation between the two indicators is low, and the coupling between the indicators is weak.

#### IV. Analysis of Coupling

As the coupling value between growth rate of resident population, localized employment rate of urban college graduates and growth rate of economic development of R city, the analysis results of the relationship between localized employment of urban college graduates and urban economic development are as follows:

(1) In terms of the coupling values between general urban population growth and urban economic development, the coupling value between general urban population growth and urban economic development in R City is at a medium level. From 2008 – 2018, the coupling values between general urban population growth and GDP growth, per capita GDP growth, and the development of secondary and tertiary industries is higher than the coupling values between general urban population growth and total retail sales of consumer goods, local fiscal revenue, and fixed investment, which indicates that the general population growth participates in the process of R City's urban economic development more as a laborer. From 2015 to 2018, the coupling values between general urban population growth and urban economic development have exhibited an upward trend, and the dimensions of this coupling have undergone discernible transformations, which specifically reflected in the more pronounced increase in the coupling between general urban population growth and fixed investment and local fiscal revenues. This indicates that the investment promotion policies and strategies implemented by R City in recent years have played a pivotal role in attracting foreign investments and augmenting fiscal revenue.

(2) In terms of the coupling value of localized employment of urban college graduates and urban economic development, the coupling trend of localized employment of urban college graduates and urban economic development in 2015 – 2018 is similar to the coupling trend of general urban population growth and urban economic development in R city in 2008 – 2018, which indicates that the relationship between localized employment of urban college graduates and urban economic development in R city is very much inline with the relationship between general urban population growth and The change rule of the relationship between urban economic development coincides well. Moreover, the coupling value between localized employment of urban college graduates and urban economic development is at a high level, higher than 20% of the coupling value of the relationship between general urban population growth and economic development indicators, indicating that higher education plays an important role in promoting the release of demographic dividend.

(3) In terms of the coupling values between general urban population growth and localized employment of college graduates and industrial development, the coupling value between general urban population growth and urban industrial development and the coupling system between localized employment of college graduates and urban industrial development, but due to the growth rate of value added of the service industry in R city is slightly higher than the growth rate of value added of the industry, especially in the recent years, the coupling between the relationship between the increase of the general urban population and growth rate of the value added of the service industry has shown a slight decline in recent years, the localized employment of college graduates of R city has a very

obvious role in adjusting and optimizing the industrial structure of the city of R city.

(4) In terms of the coupling value of general urban population growth and localized employment of urban college graduates with consumption, investment and fiscal revenue growth, localized employment of urban college graduates plays a higher role in the growth of consumption and investment, as well as in the growth of local fiscal revenue than that of general urban population growth. This also shows that, for the growth of urban consumption, whether from the age characteristics of urban college graduates or from the consumption concept of urban college graduates, the increase of localized employment of urban college graduates is conducive to the increase of the total consumption of social retail goods in R city; for the growth of urban investment, with the continuous introduction of the national policy of encouraging college students' innovation and entrepreneurship, urban college graduates with strong innovation and entrepreneurship awareness are an investment force that cannot be ignored.

## V. Conclusion

Based on the calculation and analysis of the coupling value between urban population growth, urban talent pooling and urban economic development in R city, this study culminates with several significant findings.

Firstly, it is discerned that urban higher education significantly improves the coupling degree in the interplay between population growth and economic development within the city. This improvement is attributed to the comprehensive talent cultivation facilitated by urban educational institutions, thereby unleashing a surplus of demographic dividends. Consequently, it is imperative for urban governmental bodies to accord due attention to investments in higher education. Secondly, the process of urban talent aggregation should adopt a multifaceted approach, characterized by both "introduction of high-level talents" and the "aggregation of ordinary college graduates," as well as a balanced fusion of "introduction of external talents" and "retention of urban college graduates". Such strategies should be tailored to the unique needs and dynamics of the locality, thereby necessitating the formulation of specialized talent policies. Thirdly, the assessment of the effect of talent gathering in cities must go beyond superficial assessment. It is important to assess both the quantitative and qualitative phases of talent pooling. This approach calls for strengthening the provision of environmental resources necessary for the effective utilization of talent. In addition, it emphasizes the importance of active advocacy and guidance in order to realize the full potential of urban talent aggregation.

There are some limitations to this study. Firstly, because COVID-19 affected the continuity

between the data related to urban economic development, urban population growth, and localized employment of urban college graduates in R city between before 2019 and after 2019, this study only used the relevant data from 2008 – 2018 to verify the relationship among urban economic development, urban population growth, and the localized employment of urban college graduates in the city's normal development trajectory, in order to provide more valuable suggestions for the urban talent aggregation policy in the city's normal development trajectory of City R. Secondly, due to the influence of the national data and statistics policy, as the colleges and universities in City R only started to comprehensively count the localized employment data of college graduates from 2015, coupled with the influence of COVID – 19, this study only adopted the localized employment data of urban college graduates from 2015 – 2018. Thirdly, due to the influence of the statistics of talent introduction in R city, this study fails to effectively count the data on the introduction of high – level talents, which leads to the failure to conduct a comparative analysis of the relationship between general urban population growth, localized employment of urban college graduates, the introduction of high – level talents in the city, and the city's economic development.

Future researches should employ a wider range of data from both a temporal and spatial perspective. From a temporal perspective, there is a need to continuously monitor the changes in the data on talent aggregation of City R to ensure the timeliness of the research findings, and to add the data of the period 2019 – 2022 to detect the impacts of COVID – 19 on the city's economic development, the growth of the city's population and the localized employment of the city's tertiary graduates and the coupling relationship between them. From a spatial perspective, there is a need to collect data from a wide range of scales to enhance the robustness and comprehensiveness of the research results.

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# 도시대학 졸업자의 현지고용과 도시경제발전의 결합에 관한 연구: 중국 City R 사례를 중심으로

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**요 약** [연구목적] 도시경제발전은 도시인구증가, 특히 도시 인재 집합에 의해 영향을 받는다. 도시 인재 집합의 중요한 힘으로서 도시대학 졸업생은 도시 경제 발전에 중요한 영향을 미칩니다. 본 논문은 도시 인재 정책 수립을 위한 귀중한 제안을 제공하기 위해 도시대학 졸업자의 지역적 고용과 도시 경제 발전의 결합 관계를 살펴보고자 한다.

[연구방법] 이를 위해 중국의 City R을 연구 대상으로 선정하여 도시 인구 증가와 도시 대학 졸업자의 현지 취업 간의 결합 관계를 비교 분석하였다. 회색 상관 모델과 결합 모델을 구축하여 City R의 도시 경제 발전을 분석하였다.

[연구결과] 분석 결과 도시대학 졸업생의 지역 취업과 도시 경제 발전 간의 결합 가치는 상대적으로 높은 상관관계를 갖는 것으로 나타났으며, 도시 거주자 인구 증가와 도시 경제 발전 간의 결합 가치는 중간 정도의 상관 관계를 갖는 것으로 나타났다. 도시 대학 졸업생의 현지화 고용과 도시 경제 발전은 중국 City R의 도시 거주자 인구 증가와 도시 경제 발전 간의 결합보다 약 20% 더 높은 것으로 나타났다.

[연구의 시사점] 본 연구는 도시 고등교육이 도시 인구 증가와 도시 경제 발전 간의 결합 가치를 향상시키고 더 많은 도시 인구 증가 배당금을 방출한다는 것을 보여준다. 지방정부는 도시 고등교육 발전에 관심을 기울이고 더 나은 취업 정책을 마련하여 도시대학 졸업자의 현지 취업률을 높여야 한다.

**주제어** 도시경제개발, 현지고용, 결합관계, 도시대학 졸업자

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