REGIONAL DIFFERENCES IN ENTREPRENEURIAL INTENTION OF COLLEGE STUDENTS MAY EXACERBATE REGIONAL ECONOMIC GAP

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ABSTRACT

Entrepreneurial intention is the basis and premise to start entrepreneurial activities and entrepreneurial activities affect regional economic. Based on the survey, this study tries to carry out grey incidence clustering model analyzing data of entrepreneurial intention of 1431 college students. At the same time, 13 cities' economy of these relevant universities adopt grey incidence clustering model. The results show that the both grey incidence cluster are consistent, which means the economic environment has an impact on the entrepreneurial intention of college students in this region. In turn, the different level of entrepreneurial intention resulting in different entrepreneurial activities further affects this regional economy if entrepreneurship education doesn't work well. We draw a number of implications for the theory and practice of regional entrepreneurial economy development.

Keywords: Entrepreneurial Intention, Regional Economy, Grey Incidence Cluster.

INTRODUCTION

The importance of entrepreneurship for regional economic development is recognized around the world (Urbano et al., 2018). At present, there is economic gap among different regions in China. The gap between the most cities in terms of GDP growth in 2018 is great, like Xiangtan-with an annual growth rate of 3.16%, Zhuhai-with an annual growth rate of 15.68% which nearly five times of Xiangtan. Policymakers increasingly face the question whether entrepreneurship education for college students, as entrepreneurial human capital, through entrepreneurial activities help to narrow regional economic gap. In order to encourage college students to start their own businesses at each own region, more than 5,000 incubators have been set up across the country. China, as an unusually large and non-homogeneous country (Kholil & Jumhur, 2018), has attaches great importance on the innovation and entrepreneurship of college students' education to enhance entrepreneurial intention because college students who are the potential entrepreneurs (Bergmann et al., 2016; Shirokova et al., 2018).

Entrepreneurship is an intentional process and a planned behavior (Bird, 1988).Research on entrepreneurial intention has reached important achievements in understanding of the individual's conviction to start a new venture. Previous several studies have confirmed that some of the regional elements can explain regional differences in entrepreneurial intention, which develops the Theory of Planned Behavior (TPB) framework (Zhang et al., 2015; Elston & Weidinger, 2018; Padilla-Angulo, 2019). Entrepreneurs through entrepreneurial intention and

entrepreneurial behavior create jobs, introduce new innovations and contribute to economic wellbeing and resilience of our regions (Müller, 2016).

Regional factors have been found to be important for entrepreneurship intention (Bergmann et al., 2016; Bandera et al., 2018). Due to the awareness that the linear model of entrepreneurial intention is insufficient in explaining complex relationship between entrepreneurial intention of college students and regional economic development for the mutual influence process, The objective of this study is to find recursive links between regional economy and entrepreneurial intention.

The result of our study find that regional economic environment affects college students entrepreneurial intention in different regions leading to different entrepreneurial behaviors, such as *"start-up entry"* and *"start-up exit"*, which in turn, interplay on the regional economy and regional economic vitality. Empirical results show that regional economic indicators are consistent with the indicators of regional entrepreneurial intention of college students. Under the emerging entrepreneurial wave, regions may further increase the economic gap.

This paper is structured as follows: In the next section, we provide a brief overview of the literature and build recursive links between regional economic development and entrepreneurial intention of college students. Section three outlines the research design and methodology. In section four, we explain the results from our data through empirical analysis. Section five discusses conclusion and implications.

THEORETICAL BACKGROUND

The measure of entrepreneurial intention is not a choice of *"yes"* or *"no"*, but is related to the degree of intention (Liñán & Chen, 2009). Therefore, some scholars proposed that continuous measurement method rather than absolute measurement method should be used to evaluate entrepreneurial intention, and designed the entrepreneurial intention measurement index (Thompson, 2009; Liñán & Chen, 2009).At the individual level, individual characteristics influence entrepreneurial intention. Chinese and American scholars jointly studied the determinants of entrepreneurial intention of college students, and conclude that work experience and family background also influence entrepreneurial intention of college students in China and America (Wang et al., 2011). From the perspective of international students, Malaysian scholars have found that factors such as family background, the desire to be a boss and the desire to succeed have influenced the entrepreneurial intention of college students (Joseph, 2017). Scholars further studied the influence of entrepreneurial education and entrepreneurial environment on the entrepreneurial intention of college students, and used the data of on-campus students to demonstrate relevant factors and obstacles (Kholil & Jumhur, 2018; Arranz et al., 2018). In China, the representative viewpoint of entrepreneurial intention defines the theoretical framework of entrepreneurial intention based on planned behavior theory, and has concluded that entrepreneurial intention is a subjective psychological tendency (Jiang et al., 2010). In terms of questionnaire design of entrepreneurial intention and empirical research on measurement development, some scholars have compiled a scale for measuring entrepreneurial intention of college students based on the three dimensions of entrepreneurial behavior tendency, entrepreneurial demand and entrepreneurial feasibility (Liu, 2013).There are also entrepreneurial decision-making problems based on experimental situation simulation to demonstrate that the positive entrepreneurial characteristic framework has a significant positive effect on entrepreneurial intention (Duan et al., 2016).Combined with environmental factors, scholars have studied the influence of different factors on entrepreneurial intention from the perspective of

personal background, personal characteristics, environment and other factors (Wang & Lin, 2018).This study determined that the entrepreneurial intention of college students mainly refers to the possibility that they choose to start up a business in this region in the future.

There are relevant studies of regional differences in entrepreneurial activities, mainly focusing on the analysis of differences on the establishment of entrepreneurial ecosystem. In terms of factors influencing differences, some scholars have studied institutional factors, economic factors and population factors that lead to varying in entrepreneurial activities and attitudes of entrepreneurs in different regions (Bosma & Schutjens, 2011).There is a positive correlation between the accumulation of innovation culture, knowledge and innovation enterprises in a region (Fritsch & Wyrwich, 2018). As for the regional entrepreneurship ecosystem, scholars have studied the diversity of the structure of the entrepreneurship ecosystem, and the entrepreneurship ecosystem provides the entrepreneurs with resources and convenience from the aspects of material, cultural and social resources (Krueger & Carsrud, 1993; Krueger, 2000). The quality of entrepreneurial ecosystems in different regions will affect the growth of the regional innovation economy (Bruns et al., 2017). The innovation ecosystem is different from the traditional entrepreneurial cluster, which emphasizes the use of big data, the discovery of entrepreneurial opportunities, the innovation of business model and the sharing of knowledge (Autio et al., 2018). Based on this, college students in a region are the potential force of the innovation economy and important human capital. The entrepreneurial intention of college students leads to different entrepreneurial behaviors of *"start-up entry"* and *"start-up exit"*, which is counterproductive to the regional economy and affects its regional economic vitality. The resulting theoretical framework of this paper is shown in Figure 1.

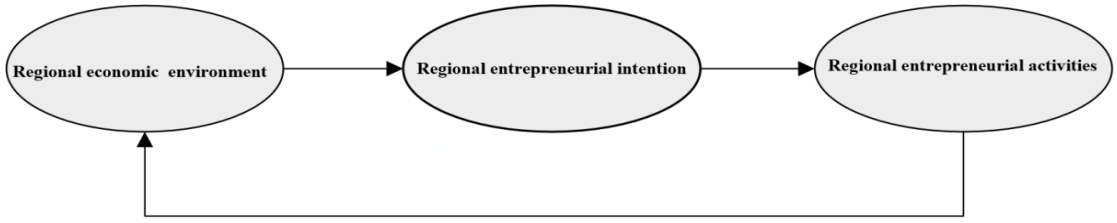

FIGURE 1
THE RECURSIVE LINKS BETWEEN REGIONAL ECONOMIC ENVIRONMENT, REGIONAL ENTREPRENEURIAL INTENTION AND REGIONAL ENTREPRENEURIAL ACTIVITY

RESEARCH DESIGN AND METHODOLOGY

Regional Economic Environment Indicators

Current study on the establishment of the multi-index system mainly focuses on the social and economic environment, sustainable development, regional competitiveness, regional comprehensive economic strength, etc. (Vertakova et al., 2016; Yakovleva et al., 2018). The regional comprehensive economic strength is mainly analyzed from the perspective of regional comparison. Sustainable economic development and growth are measured by production

potential, consumer potential, consumer potential and so on (Ohotina, et al., 2018). According to the principle of combining scientific rule and operability rule, this paper draws lessons from past research for the economic environment factors, so as to evaluate index system to measure a regional economic comprehensive development level (Li et al., 2015), including: the economic aggregate, per capita value, economic structure and environmental quality in these four aspects to build the index system of structure. The detailed indicators are shown in Table 1.

Table 1
ECONOMIC ENVIRONMENT INDICATOR SYSTEM

Construct, Source, and Measures (Li et al., 2015; Ohotina et al., 2018)		
Economic Environment Factors	Economy aggregate	Regional GDP (x_1)
		Total local revenue (x_2)
	Per capita value	Per capita regional GDP (x_3)
		Per capita disposable income (x_4)
	The economic structure	Industrial output as a proportion of GDP (x_5)
		The tertiary industry accounts for the proportion of GDP (x_6)
	Environmental quality	Good air quality rate (x_7)

Entrepreneurial Intention of College Students

According to the research (Liñán & Chen, 2009; Liñán et al., 2011) and indicators demonstration, the measurement was carried out in the two directions of attitude and perceived behavioral control. Examples of the items include *"Being an entrepreneur implies more advantages than disadvantages to me"* and *"A career as entrepreneur is attractive for me"*. The measurement tool adopted the Likert five-component scale, from *"strongly disagree"*, *"less agree"*, *"generally agree"*, *"strongly agree"* to *"strongly agree"*, and then gave a rating of 1 to 5 points (Hu et al., 2018). This study to establish the index system supported the preliminary investigation, SPSS22.0 software was adopted to improve the reliability and validity of the examination. Cronbach's α coefficient was 0.876 and factor loading coefficient 0.847 in the following Table 2. Cronbach's α coefficient and factor load values indicate that the measurement index system of the college students' entrepreneurial attitude and perceived behavioral control can be a scientific and effective measure, thus accurately measuring entrepreneurial intention.

Table 2
INDEX SYSTEM OF ENTREPRENEURIAL INTENTION OF COLLEGE STUDENTS

Construct, Source, and Measures (Liñán & Chen, 2009; Liñán et al., 2011)	
Personal Attitude	1. Being an entrepreneur implies more advantages than disadvantages to me (y_1)
	2. A career as entrepreneur is attractive for me (y_2)
	3. Being an entrepreneur would entail great satisfactions for me (y_3)
	4. If I had the opportunity and resources, I'd like to start a firm (y_4)
	5. Among various options, I would rather be an entrepreneur (y_5)
Perceived Behavioral Control	1. To start a firm and keep it working would be easy for me (y_6)
	2. If I tried to start a firm, I would have a high probability of succeeding (y_7)
	3. I can control the creation process of a new firm (y_8)
	4. I know the necessary practical details to start a firm (y_9)
	5. I know how to develop an entrepreneurial project (y_{10})

Selection of Grey Clustering and Calculation Steps

Cluster analysis is based on the idea that *"birds of a feather flock together"*. Considering that the linear model of entrepreneurial intention is insufficient in explaining the mutual influence process between complex entrepreneurial intention of college students and regional economic development, this paper has adopted cluster analysis. It explores whether there is consistency through the cluster analysis to find recursive links between regional economy and entrepreneurial intention.

Grey System Theory is pioneered by Professor Deng in 1982. Grey clustering is suitable for cluster analysis of small sample information; it is suitable for clustering with small samples in this study (Liu, 2017).

Grey clustering classifies the observation indexes or objects into several defined categories clustering according to the possibility function of grey incidence matrix or grey number. A grey class is a set of observation indexes or objects belonging to the same category. Grey clustering can be divided into grey incidence clustering and grey clustering based on probability function (Liu, 2017). In this study, grey incidence clustering is considered suitable for data characteristics, and data overflow will occur in clustering based on probability degree function. The calculation steps are as follows:

Assuming that there are observation objects, and *n* different attribute indexes are observed for each object. The sequence is as follows:

$$X_1 = (x_1(1), x_1(2), \mathrm{L}\ , x_1(n))$$
$$X_2 = (x_2(1), x_2(2), \mathrm{L}\ , x_2(n))$$
$$\cdots\cdots$$
$$X_m = (x_m(1), x_m(2), \mathrm{L}\ , x_m(n))$$

Find the upper triangular matrix: For all $i \le j$ （ i, j=1, 2, ……, m), calculate the grey absolute Incidence between X_i and X_j, and obtain the upper triangular matrix.

$$\mathrm{A}=\begin{bmatrix} \varepsilon_{11} & \varepsilon_{12} & \cdots & \varepsilon_{1m} \\ & \varepsilon_{22} & \cdots & \varepsilon_{2m} \\ & & \ddots & \vdots \\ & & & \varepsilon_{mm} \end{bmatrix}$$

Among them ε_{ii} =1, i=1, 2,……, m. Matrix A is called the attribute index incidence matrix.

Determine the category: Take the threshold r_0 ($r_0 \in [0,1]$), when $\varepsilon_{ij} \ge r_0$ (i ≠ j), X_i and X_j are considered as the same type. The classification of attribute index under the critical value r_0 is called the r_0 grey relational clustering of attribute index.

EMPIRICAL ANALYSIS AND RESULTS

The Source of Data

Economic data: There are 13 cities' economic indicators and the economic development of each region is unbalanced. This study used grey clustering and analyzed the results of grey

clustering according to each city released in March 2018 of *"2017 national economy and social development data"*. Cluster according to the economic indicators, and the regional economy is divided into three categories: *"good, medium and poor"*, which illustrated in Table 3.

Table 3
ECONOMIC INDICATORS

Region	Indicators						
	x_1 (billion yuan)	x_2 (billion yuan)	x_3 (yuan)	x_4 (yuan)	x_5 (%)	x_6 (%)	x_7 (%)
Nanjing	11715.10	1271.91	141103	48104	38.00	59.70	72.3
Suzhou	17319.51	1908.10	162107	58806	43.92	51.16	71.5
Wuxi	10511.80	930.00	160700	46453	47.20	51.50	67.7
Changzhou	6622.30	518.80	140517	41879	46.50	51.10	68.2
Zhengjiang	4105.36	284.34	128800	37169	49.40	47.10	71.5
Nantong	7734.60	590.60	105903	33011	47.10	48.00	72.9
Taizhou	4744.53	343.97	102058	30944	47.10	47.30	74.2
Yangzhou	5064.92	320.18	112559	31370	48.90	45.90	62.5
Xuzhou	6605.95	501.64	75611	24535	43.60	47.30	48.3
Lianyungang	2640.31	214.85	58577	23302	44.70	43.40	77.0
Huaian	3387.43	230.61	60392	24934	41.70	48.30	67.9
Yancheng	5082.70	360.00	61522	26740	44.40	44.50	80.3
Suqian	2610.94	439.9	53126	20756	48.00	40.80	62.2

Entrepreneurial Intention Data

At the same time, the study analyzed of these cities' entrepreneurial intention of college students through 1431 questionnaires. In the form of a questionnaire investigation through the online service WeChat, the survey was conducted for: Nanjing College of Science and technology, Suzhou College, Nanjing Information Engineering College, Jiangsu College, Changzhou College, Nantong College, Yangzhou College and so on. Choosing eleven full-time undergraduate college and universities, approved by ministry of education, undergraduate students (Junior year above) and graduate students, a total of 1431 questionnaires received surveys, resulting in 1187 completed questionnaires, an effective rate of 82.95%. The basic information is shown in Table 4.

Table 4
BASIC INFORMATION TABLE

Variable	Category	Number of samples	Percentage (%)
Gender	Male	432	36.39
	Female	755	63.61
Major	Science and Engineering	500	42.12
	Economic and management	89	7.50
	Humanities and social sciences	190	16.01
	Medical science	104	8.76
	Agronomy class	65	5.48
	The pedagogy class	107	9.01
	Other	132	11.12

Origin	City	274	23.08
	Town	347	29.23
	Rural	566	47.68
Family entrepreneurial experience	Parents have entrepreneurial experience	326	27.48
	Parents have no entrepreneurial experience	861	72.51

According to the survey, data of *"entrepreneurial attitude"* and *"entrepreneurial perceived behavioral control"* of eleven undergraduate college and graduate college, the average score of 5 points is 3.19 points after average processing. The average score is not high, and the scores of specific 10 indicators are shown in Table 5 below.

Table 5
SURVEY RESULTS OF ENTREPRENEURIAL ATTITUDE AND ENTREPRENEURIAL CONFIDENCE

University	y_1	y_2	y_3	y_4	y_5	y_6	y_7	y_8	y_9	y_{10}
Nanjing University of Science and Technology	3.0	3.0	4.0	4.0	3.0	2.5	2.5	2.5	3.0	3.5
Nanjing Information Engineering	4.0	4.0	4.5	4.5	4.0	2.5	2.0	2.5	3.0	3.0
Nanjing University of Posts and Telecommunications	3.5	3.5	4.5	4.0	3.0	2.0	2.0	3.0	2.5	2.5
Suzhou University	3.6	3.3	4.1	4.0	3.5	2.4	2.8	3.1	2.3	2.4
Changzhou University	3.8	3.5	4.0	4.1	3.5	2.4	2.8	2.9	2.7	2.6
Jiangsu University	3.5	3.6	3.9	3.8	3.7	2.7	2.5	3.0	3.0	3.1
Yangzhou University	3.4	3.2	3.7	3.8	3.3	2.4	2.8	2.9	2.6	2.6
Chinese University of Mining and Technology	3.3	3.0	3.3	3.8	3.8	2.5	2.8	3.5	2.5	2.8
Suqian University	3.7	3.4	3.8	3.9	3.5	2.6	3.0	3.1	2.9	2.8
Nantong University	3.3	3.1	3.6	3.8	3.2	2.2	2.7	2.7	2.5	2.5
Huaihai Engineering University	4.5	4	4.5	4.5	4	2.5	3	2.5	3	3

Upper Triangular Matrix

Economic indicators for thirteen cities $i \leq j$, i, j=1, 2, L, 13 were calculated between between X_i and X_j through the grey absolute correlation, and the triangular matrix is obtained as follows.

$$A=\begin{bmatrix}
1 & 0.994 & 0.920 & 0.930 & 0.938 & 0.885 & 0.826 & 0.862 & 0.775 & 0.768 & 0.766 & 0.741 & 0.738 \\
 & 1 & 0.925 & 0.935 & 0.944 & 0.880 & 0.821 & 0.856 & 0.752 & 0.765 & 0.762 & 0.738 & 0.7353 \\
 & & 1 & 0.987 & 0.978 & 0.823 & 0.857 & 0.887 & 0.714 & 0.725 & 0.723 & 0.702 & 0.700 \\
 & & & 1 & 0.994 & 0.831 & 0.866 & 0.897 & 0.720 & 0.731 & 0.729 & 0.707 & 0.705 \\
 & & & & 1 & 0.838 & 0.873 & 0895 & 0.724 & 0.735 & 0.773 & 0.7111 & 0.709 \\
 & & & & & 1 & 0.952 & 0.917 & 0.832 & 0.849 & 0.845 & 0.813 & 0.809 \\
 & & & & & & 1 & 0.961 & 0.800 & 0.815 & 0.812 & 0.783 & 0.780 \\
 & & & & & & & 1 & 0.777 & 0.791 & 0.788 & 0.761 & 0.758 \\
 & & & & & & & & 1 & 0.976 & 0.981 & 0.972 & 0.966 \\
 & & & & & & & & & 1 & 0.995 & 0.949 & 0.943 \\
 & & & & & & & & & & 1 & 0.953 & 0.948 \\
 & & & & & & & & & & & 1 & 0.994 \\
 & & & & & & & & & & & & 1
\end{bmatrix}$$

10 economic indicators of eleven universities were calculated between Y_i and Y_j through the grey absolute correlation. The triangular matrix is obtained as follows.

$$B=\begin{bmatrix} 1 & 0.604 & 0.639 & 0.902 & 0.612 & 0.750 & 0.684 & 0.821 & 0.644 & 0.679 & 0.568 \\ & 1 & 0.905 & 0.867 & 0.968 & 0.708 & 0.783 & 0.663 & 0.863 & 0.792 & 0.824 \\ & & 1 & 0.989 & 0.902 & 0.778 & 0.878 & 0.717 & 0.883 & 0.889 & 0.743 \\ & & & 1 & 0.893 & 0.784 & 0.886 & 0.722 & 0.894 & 0.898 & 0.738 \\ & & & & 1 & 0.723 & 0.804 & 0.674 & 0.888 & 0.813 & 0.803 \\ & & & & & 1 & 0.908 & 0.910 & 0.787 & 0.857 & 0.635 \\ & & & & & & 1 & 0.787 & 0.891 & 0.886 & 0.684 \\ & & & & & & & 1 & 0.724 & 0.779 & 0.605 \\ & & & & & & & & 1 & 0.902 & 0.735 \\ & & & & & & & & & 1 & 0.689 \\ & & & & & & & & & & 1 \end{bmatrix}$$

Determination of Categories

According to the result of the grey absolute correlation, the numerical value was clustered by the clustering map method. According to the numerical characteristics, k-means clustering algorithm was adopted to classify the data. Based on the objective minimization strategy algorithm, k data objects can be randomly selected from a given data set as the initial clustering center of k clusters, and each cluster center corresponds to a cluster. For the remaining data objects, the distance between them and the center points of each cluster is calculated and assigned to the nearest cluster. Finally, the center points of each cluster are recalculated. Repeat the calculation according to the above process until the center point of the cluster is no longer changed or the objective criterion function converges to several optimal locations.

$$J=\sum_{j=1}^{k}\sum_{x_i\in w_i}\left\|x_i-c_j\right\|^2$$

$$c_j=\frac{1}{n}\sum_{x_i\in w_i}x_i$$

Where, c_j is the center point of data object in the j cluster, and n is the data object contained in the cluster. Therefore, the objective function J is about the function between the data object in the cluster and the center point of the cluster. According to the results of k-means clustering in SPSS22.0, it shows that the clustering is classified into 3 categories. According to the results,

Thus, three clusters are obtained for the numerical cluster contained in A. Among them the third cluster $\varepsilon > 0.9$, n=23, There are:

$\varepsilon_{1,2}=0.994$， $\varepsilon_{1,3}=0.920$， $\varepsilon_{1,4}=0.930$， $\varepsilon_{1,5}=0.938$， $\varepsilon_{2,3}=0.925$， $\varepsilon_{2,4}=0.935$，

$\varepsilon_{2,5}=0.944$， $\varepsilon_{3,4}=0.987$， $\varepsilon_{3,5}=0.978$， $\varepsilon_{4,5}=0.994$， $\varepsilon_{6,7}=0.952$， $\varepsilon_{6,8}=0.917$，

$\varepsilon_{7,8}=0.961$， $\varepsilon_{9,10}=0.976$， $\varepsilon_{9,11}=0.981$， $\varepsilon_{9,12}=0.972$， $\varepsilon_{9,13}=0.966$， $\varepsilon_{10,11}=0.995$

$\varepsilon_{10,12}=0.949$， $\varepsilon_{10,13}=0.943$， $\varepsilon_{11,12}=0.953$， $\varepsilon_{11,13}=0.948$， $\varepsilon_{12,13}=0.994$

So we know from the trig matrix on A: X_2, X_3, X_4, X_5 and X_1 in the same category; X_7, X_8 and X_6 in the same category; X_{10}, X_{11}, X_{12}, X_{13} and X_9 in the same category, The clustering results of thirteen cities were obtained as follows:

$\{X_1, X_2, X_3, X_4, X_5\}$; $\{X_6, X_7, X_8\}$; $\{X_9, X_{10}, X_{11}, X_{12}, X_{13}\}$

Among them, $\{X_1, X_2, X_3, X_4, X_5\}$: the classes include Nanjing, Suzhou, Wuxi, Changzhou and Zhenjiang. $\{X_6, X_7, X_8\}$: The classes include Nantong, Taizhou and Yangzhou. $\{X_9, X_{10}, X_{11}, X_{12}, X_{13}\}$: The category includes Xuzhou, Lianyungang, Huaian, Yancheng and Suqian. The result of economic clustering presents the characteristics of *"good, medium and poor"*.

Thus, three clusters are obtained for the numerical cluster contained in B. Among them the third cluster $\varepsilon > 0.9$, n=7, There are:

$\varepsilon_{1,4}=0.902$, $\varepsilon_{2,3}=0.905$, $\varepsilon_{2,5}=0.968$, $\varepsilon_{3,4}=0.989$, $\varepsilon_{3,5}=0.902$, $\varepsilon_{6,7}=0.908$, $\varepsilon_{6,8}=0.910$

So we know from our B matrix X_2, X_3, X_4, X_5 and X_1 in the same category; X_7, X_8 and X_6 in the same category; X_{10} and X_9 in the same category; X_{11} With little correlation with other comprehensive indexes, special investigation is needed. After treatment, the clustering results of 11 cities are as follows:

$\{X_1, X_2, X_3, X_4, X_5\}$; $\{X_6, X_7, X_8\}$; $\{X_9, X_{10}, X_{11}\}$

Among them, $\{X_1, X_2, X_3, X_4, X_5\}$: the classes include: Nanjing University of Science and Technology, Nanjing University of Information Engineering, Nanjing University of Posts and Telecommunications, Suzhou University , Changzhou University; $\{X_6, X_7, X_8\}$: the classes include: Jiangsu University, Yangzhou University, China University of Mining and Technology; $\{X_9, X_{10}, X_{11}\}$: Nantong University, Suqian University, Huaihai Engineering University. The clustering results show the characteristics of *"strong, medium and weak"* clustering.

To sum up, the results of clustering in economically different regions are nearly consistent with the results of clustering in different regions of entrepreneurial intention of college students. The main reasons are as follows: With the development of innovation and entrepreneurship in colleges or universities, innovation and entrepreneurship education is no longer only completed by colleges or universities independently. Innovation and entrepreneurship education is closely related to the regional governments and regional economic environment. According to regional differences, if innovation and entrepreneurship education cannot be adapted to improve local economic conditions, more college students start a business in rich economic regions and fewer college students start a business in poor economic regions.

DISCUSSION

Entrepreneurial intention has three types of clustering *"strong, middle or weak"*, which interplayed with the regional economic difference of *"good, medium, poor"*. From the perspective of economic environment, entrepreneurship education should combine with local characteristics in line with regional differences. That is to say, entrepreneurship education is the facilitator of regional development (Galvão et al., 2018), which may stimulate the entrepreneurial intention of college students in *"poor"* region.

The effect of college students' entrepreneurship activities on regional economic and social development have a direct value and indirect value like entrepreneurship culture, which, in turn, promotes regional economic development (Kholil & Jumhur, 2018).

CONCLUSION

This study focused on the different regional college students' entrepreneurial intention through clustering entrepreneurial intention and region economy, which interestingly found consistency between entrepreneurial intention and region economy. If college students lose their impulse and desire to innovate and start a business in this region, then the transformation of a high quality development in the region will eventually lose its momentum of development. Under the entrepreneurial wave, this in turn will widen the economic gap of China. In the regions with poor economy, entrepreneurship education should be strengthened to attract college students to start businesses in this region, which help to maintain economic vitality.

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