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The Agglomeration Mechanism of Network Emerging E-Eommerce Industry Based on Social Science

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ABSTRACT

Network emerging e-commerce refers to the development of wireless broadband technology, smart terminal technology, near-field network, etc. as the driving force. It is the emerging e-commerce represented by the continuous development of modern e-commerce and the integration of commerce. This paper proposes to use Michael Porter's cluster theory method, income increasing algorithm, and spatial Gini coefficient method to sort out and analyze the research results of industrial agglomeration problems, further study the relationship of e-commerce industry agglomeration mechanism, and build agglomeration simulation model, the construction of the centripetal force model of the industrial agglomeration area, through the analysis of the production factors of the e-commerce industry, and then study the influence of each factor on the development of the e-commerce industry. Finally, this paper selects and uses 16 standard mechanical data sets to investigate and analyze the agglomeration mechanism of the e-commerce industry, which verifies the accuracy and overall applicability of the method.

KEYWORDS

Cluster Theory, Emerging E-Commerce, Industrial Agglomeration Mechanism, Social Science

1. INTRODUCTION

Due to my country's increasingly limited resources and environmental constraints, the traditional methods of large-scale investment, large-scale consumption, and extensive development are unscientific and unsustainable (Tsai, 2016). Economic growth returned to normal. The emergence of e-commerce breaks the limitations of time and space, changes the traditional forms of transactions, reduces circulation costs for the entire society, and brings more choices to consumers (Wu & Tsai, 2018). With the integration of emerging e-commerce and traditional industries, it is the transformation of traditional industries. Major breakthroughs have been made in upgrading and innovative development. Based on this background, my country must increase economic support for the emerging e-commerce industry and strengthen the development of e-commerce industry projects. For this reason, this article discusses the agglomeration mechanism of the emerging e-commerce industry from the perspective of social science. Analyze and explore. I hope it can be helpful to the country's economic planning and construction.

The advent of e-commerce will further overcome the limitations of traditional e-commerce in terms of time and area, and will enable people to conduct various e-commerce activities easily, quickly

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and safely. The popularity of emerging Internet e-commerce will significantly change people's life and work methods. Emerging e-commerce can fully meet the individual needs and preferences of consumers, and users can also choose their own equipment, as well as the way to provide services and information. The sociality of Xinxing Electronics in business is mainly reflected in the sociality of network-based culture, the extensive participation of users, and the socialization of credit models. In the emerging e-commerce environment, people are in a more open network. People's experience in participating in e-commerce activities will lead to more valuable links. Therefore, the social nature of emerging e-commerce will create new value.

In the e-commerce industry, there is increasing emphasis on Big Data Analysis (BDA). However, as a concept, there is still a lack of exploration, which hinders the development of its theory and practice. Explore the BDA in e-commerce through a systematic review of the literature. Zhu H proposed an explanatory framework that explored the defining aspects, unique characteristics, types, business value and challenges of BDA in the e-commerce field. The paper also sparked a broader discussion about future research challenges and theoretical and practical opportunities. Overall, the research results integrate different BDA concepts (for example, the definition, type, nature, business value and related theories of big data), and provide deeper insights for cross-domain analysis applications in e-commerce (Zhu et al., 2016). There is increasing emphasis on big data analysis (BDA) in e-commerce. However, as a concept, it still lacks exploration, which hinders its theoretical and practical development. Explore the BDA in e-commerce through a systematic review of the literature. Devaraj S proposed an explanatory framework that explored the defining aspects, unique characteristics, types, business value and challenges of BDA in the e-commerce field. The paper also sparked a broader discussion about future research challenges and theoretical and practical opportunities. Overall, the research results integrate different BDA concepts (for example, the definition, type, nature, business value, and related theories of big data) to provide deeper insights for cross-domain analysis applications in e-commerce. (Devaraj et al., 2002). Bing L has developed an unsupervised learning framework for extracting popular product attributes from product description pages from different e-commerce websites. Different from the existing information extraction methods that do not consider the popularity of product attributes, the proposed framework can not only detect popular product features from customer reviews, but also map these popular features to related product attributes (Bing et al., 2016).

With the popularization of the Internet of Things and the development of information technology, the rapid development of the e-commerce industry has been promoted. In my country's socialist economic market model, e-commerce is taking a higher and higher position (Wu et al., 2020). From the perspective of social science, this paper explores the emerging e-commerce industry agglomeration mechanism on the Internet. It uses Michael Porter's cluster theory method, income increasing algorithm, and spatial Gini coefficient method to sort out and analyze the research results of industrial agglomeration issues, and further In-depth study of the relationship between the agglomeration mechanism of the e-commerce industry, through the construction of agglomeration simulation model, the construction of the spatial measurement model, the construction of the centripetal force model of the industrial agglomeration area, and the analysis of the production factors of the e-commerce industry, and then study the influence of each factor on the development of the e-commerce industry . It is conducive to promoting the orderly development of my country's emerging e-commerce economy on the Internet.

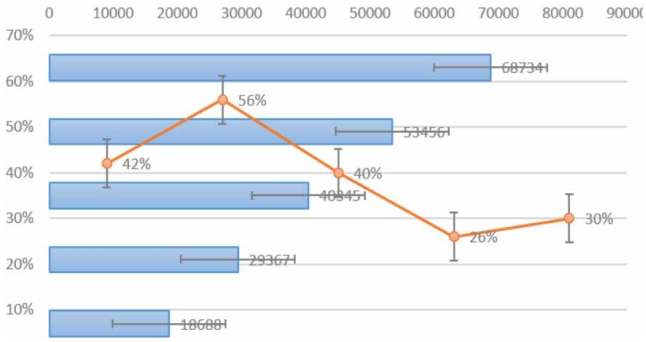
2. BASED ON THE SOCIAL SCIENCE POINT OF VIEW OF THE NETWORK EMERGING E-COMMERCE INDUSTRY AGGLOMERATION MECHANISM METHOD

2.1 E-commerce Development Mechanism

About e-commerce not only promotes product innovation in characteristic industries, but also has perfect effects on market demand segmentation, increasing the level of demand and enriching the content of product innovation, and the instant interaction of e-commerce information accelerates the process of product innovation. At the same time, with the rapid development of e-commerce, performance evaluation management has also emerged, which intensifies the intensity of product competition and forces product innovation.

The emergence of e-commerce has gradually transformed consumers from traditional offline purchases to more convenient online consumption. According to statistics, in recent years, my country's total online retail sales have achieved continuous growth, reaching as high as 6,710 billion yuan in 2017, an increase of 30% year-on-year, of which online retail sales accounted for 18.4% of total social retail sales in 2017. The transformation of e-commerce to consumption patterns has enabled enterprises to gradually create business models that adapt to consumption patterns, thereby realizing business model innovations in county-level characteristic industries. my country's e-commerce online retail sales over the years are shown in Figure 1:

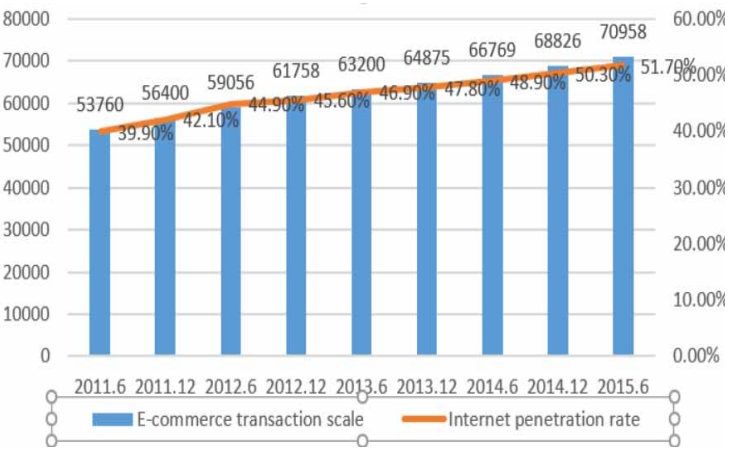
Figure 1. My country's e-commerce online retail sales



With the popularization of the Internet and the development of information technology, the rapid development of the e-commerce industry has been promoted, and the scale of the industry is also expanding rapidly. It has become a new type of business model that people are very keen on. While providing people with high efficiency and convenience, e-commerce has occupied a certain position in my country's market sales industry with a super-high development speed. The e-commerce market has developed in China for more than ten years. It has gone through an initial period, a development period, and a period of rapid development until now. It has formed C2C (such as Taobao and Paipai), B2B (such as Chinese suppliers and Alibaba), three major e-commerce models based on B2C (such as Vipshop and JD.com). The relationship between the popularity of the Internet and the number of netizens is shown in Figure 2:

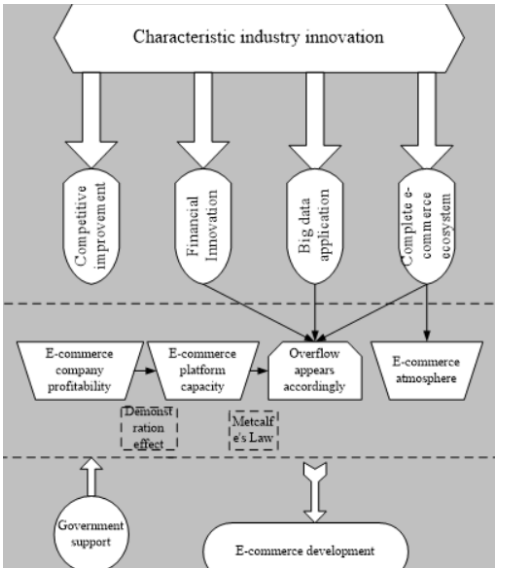
The transaction scale of my country's e-commerce market is developing at a sustained and steady growth rate, and the annual growth volume is also constantly expanding. This shows that in our country's market model, e-commerce is in a higher and higher position.

Figure 2. E-commerce transaction scale and Internet penetration rate



After the first involved parties enjoy the benefits of e-commerce, they will drive more people to join the ranks of e-commerce. The scarcity of e-commerce talents and the lack of skills will force the e-commerce training system to gradually develop and improve, and the atmosphere of e-commerce is getting stronger and stronger. Figure 3 is a diagram of the mechanism of e-commerce development.

Figure 3. Mechanism diagram of e-commerce development

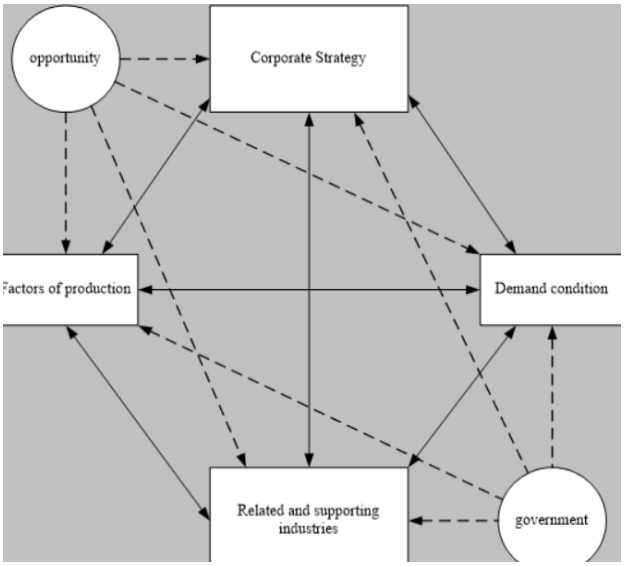


2.2 Michael Porter's Cluster Theory Method

Industrial agglomeration refers to an organic whole composed of companies and other corresponding institutions that are related and closely related to a specific industry field. It is a phenomenon in which companies are concentrated in geographic regions according to their industries or related industries, and is a spatial manifestation of industrial organization (Min, 2017).One of the most important theories

of the industrial complex is Porter's diamond model. He emphasized that industries with national competitive advantages often have high localization characteristics, and the formation of such industries depends on the following six factors: conditional agency conditions ,demand conditions ƒrelevant supporting industries „strategy, structure and horizontal competition …opportunities † government. Among them, the first four are key influencers, and the latter two are additional influencers. The geographical concentration of these factors can make the diamond system strong, and the result is a clustering effect. The country (or region) creates conditions (economic, social, political, and legal environment) that affect the competitiveness of typical industries. Research shows that there is a close relationship between industrial agglomeration and economies of scale. Based on this, a model of increasing returns for agglomeration economies is constructed, and at the same time, international trade issues are closely integrated with regional economic development. Carry out sorting and analysis. As shown in the diamond model in Figure 4:

Figure 4. Diamond model



2.3 Increasing Returns Algorithm

If the economically related enterprises gather together, a certain division of labor network will be formed. The increase in output is caused by the deepening of the division of labor. After entering the spatial dimension, the principle of increasing revenue appears in the context of a specific space or location. At present, the external manifestation of increasing returns is reflected in the accumulation of economic activities in the region. It is the scale economy effect produced by various economic activities including industrial activities in a certain space. This kind of scale economy caused by agglomeration will also attract new production factors to the same location.

The model uses site selection in industrial clusters and obtains incremental returns through companies pursuing competitive prices (Gudigantala et al., 2016). Assuming that the products of the downstream department of the production unit require the products of the upstream department of the unit to be combined with it, that is, the total amount of products in each division of labor is equal, then there is

$C_i A_i = \mathrm{q}, i = 1, \ldots n$ ***(1)***

Among them, the number of independent producers in the sector, the output of a single producer in the sector; q is the total product output of the industrial cluster. The profit of a producer in the sector is;

$$Y_i = (p_i - p_{i-1} - n_i)q_i - f_i \tag{2}$$

Among them, is the product price of the department and is the price of the intermediate product produced by the upstream department. is the variable cost of the department's unit product, assuming it remains unchanged, and is the fixed cost of the department's enterprise. Suppose output is a decision variable, and for departmental enterprises, the product price F of the upstream department is regarded as a given parameter. It can be obtained by the first-order condition of profit maximization;

$$p_i - p_{i-1} - n_i + q_i \frac{\partial p_i \partial Q}{\partial Q \partial q_i} = 0 \tag{3}$$

Producers in the same division of labor face the same departmental product prices, and use the department's total output model;

$$Q = \sum_{h=1}^{n_i} q_i \tag{4}$$

Available: $\frac{\partial Q}{\partial q_i} = 1 + \sum_{h=1} \frac{\partial q_j}{\partial q_i}$ (5)

Satisfy the condition that the estimated change is 0, using formula 1 and formula 3

$$p_i - p_{i-1} - n_i + c_i \frac{\partial p_i}{\partial Q_i} = 0 \tag{6}$$

To simplify the analysis, suppose the inverse demand function of the division of labor is pi=ai-biq., ai and bi are given parameters. Substitute into the 6 formula, get;

$$p_{i-1} = a_i - n_i - \frac{c_i + 1}{c_i} b_i Q \tag{7}$$

The recursion method can be used to get the final product pricing. We set the inverse demand function of the final product as P=a-bQ, and the price of the final product is the product price of the division of labor, so p=pk is satisfied. Continue to use the formula until department 0 is obtained;

$$0 = a - \sum_{i=1}^{k} n_i - bQ \times \frac{\prod_{i=1}^{k} c_i}{\prod_{i=1}^{k} c_i + 1} \tag{8}$$

The reuse condition Pk=a-bQ can get the pricing of the final product;

$$p = p_k = a - \sum_{i=1}^{k} n_i - bQ \times \frac{\prod_{i=1}^{k} c_i}{\prod_{i=1}^{k} c_i + 1} \tag{9}$$

If a> $\sum_i n_i$ is satisfied, there is;

$$\frac{\partial p_i}{c_i} = -(a - \sum_{i=1}^{k} n_i) \times \frac{\prod_{h=1}^{k} c_h}{\prod_{h=1}^{k} c_h (n+1)} \times \frac{1}{(c_i + 1)^2} < 0 \tag{10}$$

The above formula shows that every time a new production enterprise enters, no matter which intermediate product it enters, the pricing of the final product of the industrial cluster will be lowered a little, and the price competitive advantage will also be strengthened a little. In order to obtain this advantage, enterprises will continue to enter the industrial cluster, which explains the phenomenon of industrial agglomeration formed in order to obtain increasing returns (Biagi & Falk, 2017).

2.4 Spatial Gini Coefficient Method

Spatial Gini Coefficient is a measure of industrial spatial agglomeration widely used in many economic literature (Deng & Wang, 2016). The specific calculation method refers to the ratio of the number of employees in a certain industry to the total number of employees in a specific area and the area the proportion of the number of employed persons to the total number of employed persons. The spatial Gini coefficient refers to the method of measuring the fairness of income distribution by the typical Lorenz curve to reflect the difference and uneven distribution of the production scale of a certain industrial structure in a specific area, and at the same time as a comprehensiveness that can reflect the degree of distribution. Indicators, spatial Gini coefficient can also be used to measure urban concentration, enterprise agglomeration, etc. Calculated as follows:

$$G = \sum_{ij} (x_{ij} - s_{ij})^2, (0 \le G \le 1) \tag{11}$$

Where X_{ij} is the proportion of e-commerce employment to the total e-commerce employment, and S_{ij} is the proportion of the total employment to the total employment (city j in the i year). It can be seen from the formula that the value of the spatial Gini coefficient G is always between 0 and 1, and the higher the value, the more obvious the degree of agglomeration of the e-commerce industry in the provinces and cities (Chaparro-Pelaez et al., 2016).

2.5 Sections of This Chapter

This chapter first introduces e-commerce in detail. Under the promotion of the development of e-commerce, my country's economic development has increased the total retail sales of the Internet, which has led to economic development and improvement, which has brought people a more convenient and efficient way of life, and then further described e-commerce. Business development mechanism, description of the diamond model in Michael Porter's cluster theory, the use of increasing revenue algorithms and algorithm optimization explain the phenomenon of industrial agglomeration formed by increasing revenue. Introduced the spatial Gini coefficient method, and further explored the degree of e-commerce industry agglomeration and its mechanism (Hsiao et al., 2017).

3. INDUSTRIAL AGGLOMERATION EXPERIMENT

3.1 Construction of Centripetal Force Model for Industrial Clusters

Among them, W, U, B, and T respectively represent the climate status, knowledge spillover capacity, infrastructure perfection and regional technical strength of a region (Jannach et al., 2017). At the same time, assuming that the centripetal force model has the properties of the Cobb-Diagram production function, the centripetal force function F=f (W,U,B,T), embodied as:

$$F = W^{\alpha}U^{\beta}B^{\chi}T^{g} \tag{12}$$

Assume $\alpha + \beta + \chi + g = 1$, and the centripetal force are mainly determined by these four factors. It is also assumed that the initial value of $\alpha, \beta, \gamma, \delta$ is proportional to the regression coefficients of the four factors W, U, B, and T in the non-intercept regression equation, that is to say, the location factor pairs with large coefficients in the regression equation cluster The contribution rate of the agglomeration speed of enterprises in the region is large. On the contrary, in the regression equation, the location factor with a small coefficient before the variable corresponds to a relatively small index in the centripetal force model. According to this assumption and the centripetal force prototype $F = W^{\alpha}U^{\beta}B^{\chi}T^{g}$ proposed above, we can first obtain a relatively specific centripetal force formula:

$$F = W^{0.074}U^{0.242}B^{0.433}T^{0.252} \tag{13}$$

According to formula 12 and the initial value of $\alpha, \beta, \gamma, \delta$, we can roughly calculate the centripetal force value of 26 provinces, cities and autonomous regions in my country. The calculation process is as follows. First, according to the corresponding statistical yearbook, summarize the climate conditions, knowledge spillover capacity, infrastructure perfection and regional technical strength of each region in the year, and then standardize with a certain province and city as the standard, and finally calculate it according to Formula 12. The initial value of the centripetal force of each province, city and autonomous region in the year (Hallikainen & Laukkanen, 2018).

3.2 Construction of Spatial Measurement Model

In order to explore the relationship between the agglomeration of emerging e-commerce industries, the following spatial measurement model is constructed, where Equation 14 represents the spatial lag model (SAR), and Equation 15 represents the spatial error model (SEM) (Chen, Zheng, Srinivasan et al, 2016).

$$\text{SAR: } aggm_{it} = \rho W_{ij} aggm_{it} + \alpha_0 + \alpha_1 aggm_{it}^{\ 2} \alpha_2 aggm_{it} + \alpha_3 Z_{it} + A_{it} \tag{14}$$

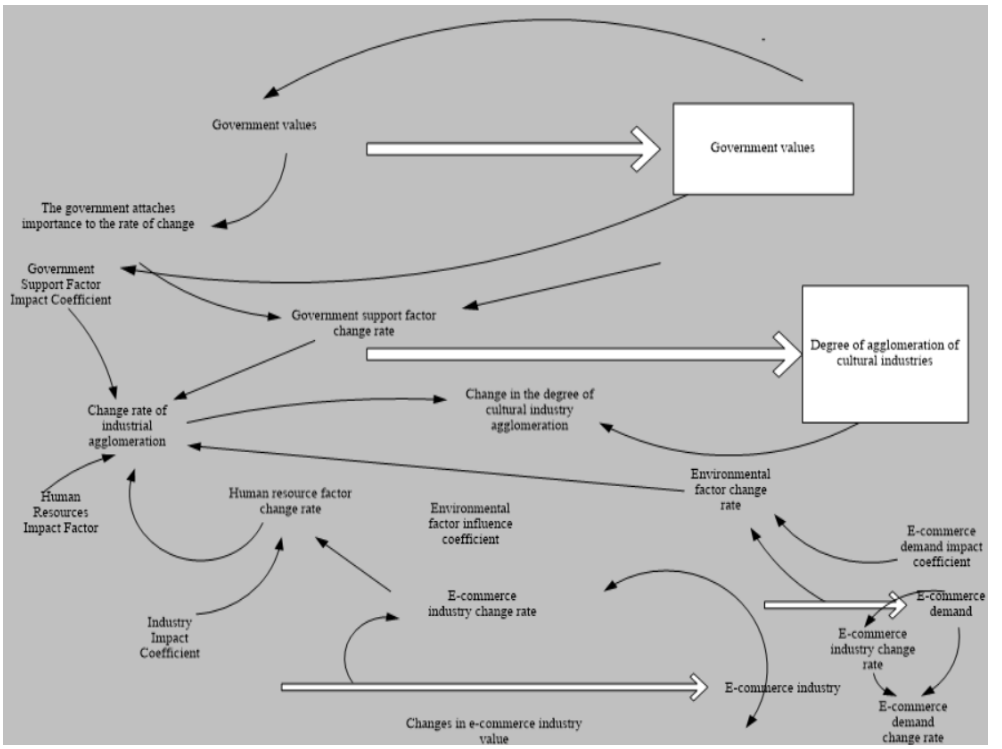
$$\text{SEM: } aggm_{it} = \alpha_0 + \alpha_1 aggm_{it}^{\ 2} + \alpha_2 aggm_{it} + \alpha_3 Z_{it} + B_{it}, B_{it} = \lambda W_{it} B_{it} + A_{it} \tag{15}$$

In the formula: aggmit and aggsit are the influence and agglomeration degree of a specific region i on the manufacturing and producer services during the t period, respectively. In view of the simple and easy calculation method of location entropy, it can accurately reflect the various regions in a certain region. The level of industrial agglomeration of the industry, and the use of location entropy can eliminate the difference in regional scale. In existing research, most scholars will choose the location entropy method in the research process (Artz et al., 2016; Liu et al., 2017) (Aljukhadar & Senecal, 2016; Kabanda & Brown, 2017). This article also uses regional entropy to measure the degree of industrial agglomeration, and its calculation formula is:

$$aggm_{it}(t) = \left[\frac{e_{ik}(t)}{\sum_i e_{ik}(t)}\right]\left[\frac{\sum_k e_{ik}(t)}{\sum_i \sum_k e_{ik}(t)}\right] \tag{16}$$

Among them, eik(t) represents the number of jobs in the k industry in the i region during t, $\sum$ e $_{ik}$(t) and e$_k$(t), i, k represent the number of jobs in the k industry in the t period and the number of

Figure 5. E-commerce agglomeration simulation model



jobs in i in the t period, respectively. eik(t), ik represents the total number of employment in period t. Zit is the control variable of region i in period t; &0, &1, &2, &3 are variable coefficients, β, λ is the spatial autoregressive coefficient and spatial autocorrelation coefficient respectively; Ait μBit is the random error term, i, j =1,, n,i ≠ j, n are the number of cities; Wij is the spatial weight matrix, and Zit is the control variable. Four control variables are selected in this chapter: market potential (MP), transportation infrastructure (T), fixed capital investment (INV) And foreign direct investment (FDI), which are expressed in terms of per capita GDP, per capita freight volume, per capita fixed capital investment, and per capita actual utilization of foreign capital (Aljukhadar & Senecal, 2016).

3.3 Construction of Agglomeration Simulation Model

The original intention of the system to establish the entire simulation model mainly depends on the research purpose of the thesis. This article mainly analyzes and studies the key influencing factors and their effects of e-commerce industry agglomeration. Therefore, the simulation based on the system dynamics method is established (Kabanda & Brown, 2017). The model is mainly to analyze the influence and function of these factors on the formation of e-commerce industry agglomeration. With the help of quantitative research and dynamic simulation tools, it selects ideal models that are conducive to the development of e-commerce industry agglomeration and proposes corresponding policy recommendations. The establishment of theoretical models is based on certain assumptions (Bao et al., 2016). According to the above system goals, the simulation model of e-commerce industry agglomeration based on system dynamics in this thesis is constructed based on the following basic assumptions: (1) Agglomeration development of e-commerce industry The process is a continuous and gradual dynamic process, but ultimately manifests as a static stock such as the degree of industrial agglomeration of the e-commerce industry; (2) The model mainly considers the influence of environmental factors, human resources, government support and other factors on the agglomeration of the e-commerce industry. However, the specific external mode adopted in its agglomeration is not involved; (3) Abrupt changes in the system state caused by abnormal factors are not considered (Wang et al., 2016). The simulation model diagram of e-commerce agglomeration is shown in Figure 5:

3.4 Subsections of This Chapter

This chapter first constructs the centripetal force model of industrial agglomeration areas, using a certain province as a reference, and then can calculate the initial value of the centripetal force of each province, city and autonomous region. Then the spatial measurement model is constructed to roughly measure the degree of industrial agglomeration. Finally, through the construction of agglomeration simulation model, the flow chart of the industrial agglomeration simulation model is described. The model analyzes the production factors of the e-commerce industry, and then studies the influence of each factor on the development of the e-commerce industry (Chen, Hou, & Xiao, 2016).

4. THE IMPACT OF INDUSTRIAL AGGLOMERATION

4.1 Simulation Analysis of Agglomeration Technology

About gathering learning is to gather technical skills through formal and informal exchanges within the gathering enterprise, and improve the technical level obtained through cooperation and collaboration. In order to observe the impact of agglomeration learning on enterprise technology and agglomeration technology, this paper conducts observation and analysis by adjusting the value of agglomeration learning. The sum of values for agglomerated learning means that enterprises use the agglomeration technology of agglomeration learning and compare the enterprise technology and agglomeration technology in the two cases to illustrate the role of agglomeration learning (Blythe, 2016). The linear curves of the cluster learning settings of 0.1, 0.25, and 0.3 are shown in Figure 6

Figure 6. Agglomeration technology diagram with agglomeration learning set to 0.1, 0.25, 0.3

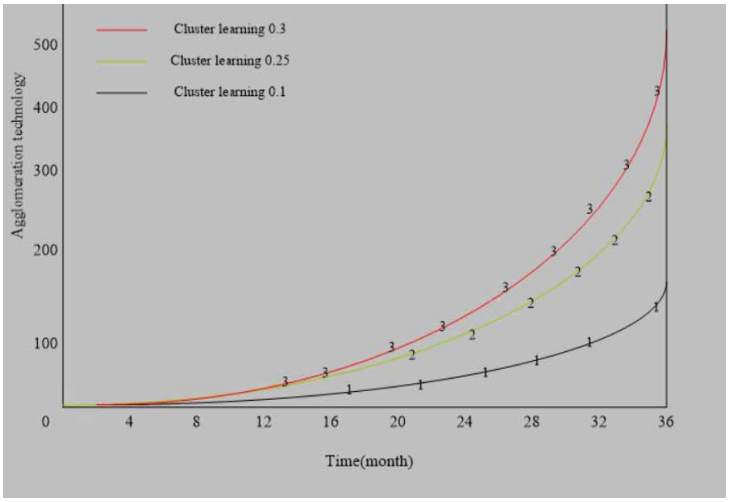


Figure 7. The number of agglomerated enterprises with tax rate changes

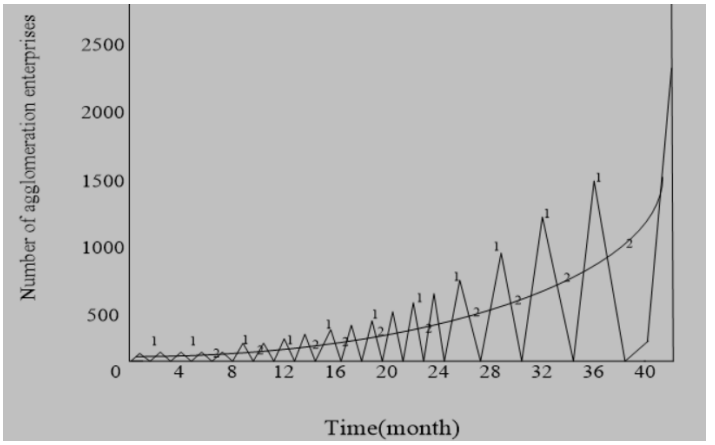


Table 1. Results of spatial dependence test

Industry		All industry	1	2	3	4	5
LM (lag)	LM	297.7014	297.3186	288.4552	298.7030	282.6112	257.7666
	Value P	0.000	0.000	0.000	0.000	0.000	0.000
Robust LM(lag)	R_LM	9.4645	16.2341	24.1584	6.4582	22.3162	36.8322
	Value P	0.002	0.000	0.000	0.000	0.000	0.000
LM(error)	LM	278.5206	274.3958	260.8997	283.2758	267.1978	252.8855
	Value P	0.000	0.000	0.000	0.000	0.000	0.000
Robust LM(error)	R_LM	0.2767	3.2963	6.6059	0.0039	7.3528	12.9521
	Value P	0.599	0.069	0.010	0.950	0.950	0.000

The higher the agglomeration learning level in the agglomeration area, the higher the agglomeration technology. Agglomeration learning can make the entire organization within the agglomeration have a spillover effect, and promote the technological improvement of enterprises in the region. The overall technological improvement is reflected in the improvement of the agglomeration technology. Agglomeration learning can not only help companies in the group reduce innovation costs and risks, but also improve the overall level of knowledge accumulation of the agglomeration, By promoting the development of Agglomeration's internal innovation activities, it will enhance Agglomeration's innovation capabilities, forming a unique competitive advantage and improving Agglomeration's technology (Gonalves et al., 2017).

The tax rate is an important influencing factor in the economic environment of the location. Through the change of the tax rate, the result is shown in Figure 7:

When the tax rate was increased to 60% (curve 1), the number of agglomerated enterprises began to fluctuate sharply in the later stage of the simulation. This is because the tax rate reduces the net income of agglomeration, and at the same time, infrastructure investment increases due to the increase in taxation. The net income of agglomeration is constantly changing due to the changes in these two factors, causing changes in the growth rate of the net income of agglomeration. If the growth rate of agglomeration net income is positive, companies will be attracted to join, and the number of agglomeration companies will increase. When the growth rate of agglomeration net income is negative, the company will exit and the number of agglomeration companies will decrease (Mero, 2018).

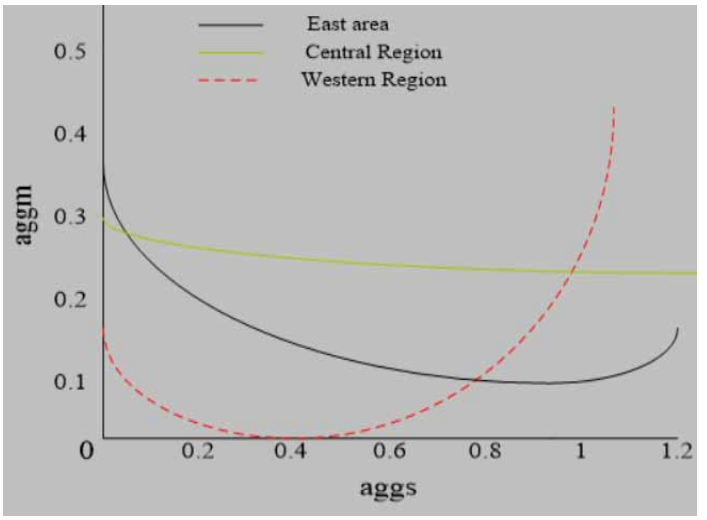
4.2 Spatial Measurement Model Analysis

Regarding the estimation of the spatial measurement model, this article uses mat lab to achieve. First, determine the spatial measurement model to be selected in this article. When constructing the model, this paper constructs the spatial lag model (SAR) and the spatial error model (SEM) at the same time, so empirical regression is being carried out. Before you need to determine which model to choose, according to the specification of the spatial measurement model estimation process, input the index data and the spatial weight matrix into mat lab for spatial dependency testing, and make the Lagrangian multipliers LM (lag) and LM(error) test, the test results are shown in Table 1. The spatial lag effect and spatial error effect of the whole industry and sub-industry have passed the test. The value of LM (lag) is slightly larger than that of LM (error), and the value and significance of Robust LM (lag) of the whole industry and sub-industry are both obvious Greater than Robust LM (error), so the spatial measurement empirical process of agglomeration of producer services to manufacturing agglomeration should choose the spatial lag model (Borreguero et al., 2017).

Because the sample regression analysis of this article is limited to some specific individuals (230 prefecture-level cities in China), this article chooses fixed effect estimation. Table 1 shows the estimated results of the national SAR model for regional fixed, fixed time, and two-way fixed regional time. By comparing the goodness of fit R2 of the three fixed effects, the two-way fixed effect of regional time has the highest goodness of fit, so the following Both regional and time two-way fixed effects are selected for the regression of sub-regions and sub-sectors. The estimation results in Table 1 verify the research hypothesis of this article, that is, the agglomeration of the producer service industry is not simply a promotion or crowding-out effect on the agglomeration process of the manufacturing industry. The collaborative agglomeration of the producer service industry and the manufacturing industry has a U-shape. Non-linear characteristics. When a region initially develops the producer service industry, it will increase the production cost of the manufacturing industry, which will crowd out the manufacturing industry. When the development of the producer service industry reaches the threshold, it will promote the development of the region's manufacturing industry (Kudryashova & Vorozhtsov, 2016). This is not completely consistent with the existing research conclusions. Scholars mostly believe that the agglomeration of producer services has a significant positive effect on manufacturing agglomeration. However, this article believes that the reason for this phenomenon may also be the choice of industries. After deducting the control variables in the model, and according

to the estimation results of the spatial lag model, trace the points corresponding to aggm and aggs to make a regional agglomeration effect map as shown in Figure 8:

Figure 8. Agglomeration effect by region



Comparing the empirical results of the three major regions, we can find that the effect of the agglomeration of producer services in the eastern and central regions on the manufacturing industry is not obvious. However, the regional advantages of the western region are not obvious, and the attractiveness of its own endowments to manufacturing enterprises is limited. Therefore, the development of manufacturing depends more on the role of related industries (Mu & Xuan, 2019).

4.3 Calculation Results and Analysis of Gini, Hhi and Eg

Since the development of the e-commerce industry, a certain province is making steady progress in the process of building an "international e-commerce center". According to a provincial big data analysis report in the first half of 2016, the province's e-commerce is growing steadily, and the overall level is leading the country. The e-commerce industry's cumulative online retail sales reached 406.584 billion yuan, and the National Research Center for Cross-border E-commerce Technical Trade Measures has also settled. Zhejiang. In this paper, the median difference method of neighboring points is used to fill

Table 2. G, HHI and EG coefficients of e-commerce industry in a certain province

years	2006	2007	2008	2009	2010	2011	2012
G	6.03%	6.40%	8.19%	7.23%	6.81%	6.81%	5.98%
HHI	0.08%	0.21%	0.43%	0.62%	0.98%	1.11%	1.24%
EG	6.87%	7.17%	9.07%	7.77%	6.96%	6.27%	5.74%

it up to better maintain the trend of the data. The G index, HHI index and EG index of a province's e-commerce industry have been calculated (Xuan et al., 2016). The results are as follows:

Table 2 shows: Combining the graph and table, we can visually analyze the development and trend of e-commerce industry agglomeration level in a certain province over the years.

As shown in Table 2, the G index of the e-commerce industry in a certain province is generally stable, with historical data fluctuating at a level of about 6%-8%, and the difference between the G index in 2015 and 2006 is only 0.17%. The HHI index showed an overall upward trend, with a significant increase of 3.2% in 2015 compared to 2006, which is a relatively large increase. Compared with the G index and the HHI index, the EG index has the largest change, showing a certain downward trend. From the perspective of the EG index index range, the EG index of the e-commerce industry in a certain province has been higher than 2% over the years, indicating that the e-commerce industry in Zhejiang Province is in Continue to maintain the medium-to-high concentration level from 2006 to 2015

4.4 Subsections of This Chapter

This chapter optimizes the agglomeration technology through the simulation analysis, the higher the agglomeration learning level in the agglomeration area, the higher the agglomeration technology. Agglomeration learning can make the entire organization within the agglomeration have a spillover effect, and promote the technological improvement of enterprises in the region. Through the analysis of the economic and environmental tax rate of the location, it is found that if the growth rate of the agglomeration net income is positive, companies will be attracted to join, and the number of agglomeration companies will increase. When the growth rate of the agglomeration net income is negative, the enterprise will exit. Then the spatial measurement model is analyzed, and the agglomeration of producer services has a significant positive effect on the agglomeration of manufacturing. Finally, the calculation results of Gini, HHI and EG in Zhejiang Province are analyzed. The agglomeration of the e-commerce industry has played an important role in solving jobs (Michel et al., 2016).

5.CONCLUSION

With the popularization of the Internet and the development of information technology, the rapid development of the e-commerce industry has been promoted, and the scale of the industry has continued to expand rapidly. It has become a new business model that people are very keen on. While providing people with high efficiency and convenience, e-commerce has occupied a certain position in my country's market sales industry with a super-high development speed. Therefore, the research and analysis of the agglomeration mechanism of the e-commerce industry is indispensable. This article mainly explores the agglomeration mechanism of the emerging online e-commerce industry based on the perspective of social science, and finds that the agglomeration of the e-commerce industry has beneficially promoted the social and economic development of our country. Employment has also brought people a more comfortable and convenient lifestyle. However, the disadvantage is that as a concept, it still lacks exploration, which hinders its theoretical and practical development.

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