
**THE REGIONAL DETERMINANTS OF
FOREIGN DIRECT INVESTMENT IN HENAN
PROVINCE, CHINA**

Doctoral Thesis

by

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Cogito, ergo sum

--Descartes

For those who love me and those I love.

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ABBREVIATIONS

CEO	Chief Executive Officer
EU	European Union
FDI	Foreign Direct Investment
FE	Fixed Effects
GDP	Gross Domestic Product
GLS	Generalized Least Squares 18 cities
GMM	Generalized Method Of Moments
IMF	International Monetary Fund
MNE	Multinational Enterprise
OLI	Ownership – Internalization- Location
OLS	Ordinary Least Squares
OECD	Organization for Economic Cooperation and Development
RE	Random Effects
SEM	Structural Equation Modeling
WTO	World Trade Organization
UNCTAD	United Nations Conference on Trade and Development

CHAPTER1 INTRODUCTION

1.1 Research background and motivation

Foreign direct investment (FDI)¹, as an essential form of international capital flows, takes multinational corporations (MNCs) as the micro-carriers and plays a vital role in the global economy, which has an impact on the economic development of a country or region(Asiedu 2002; Hermes and Lensink 2003). Since the reform and opening to the outside world², China has carried out the strategy of taking economic development as the central task³. According to the National Bureau of Statistic Data, during 1978-2015 years, GDP increased from CHY 364 billion to CHY 74,412 billion⁴, the average growth rate reached 9.2%; per-capita GDP increased from CHY 381 to CHY 55,412⁵. Moreover, inward FDI in China has increased dramatically with the development (Fetscherin, Voss and Gugler 2010) (See Figur1-1). While the stock of inward FDI stood at USD 1 billion by 1980, and FDI flows were USD132 billion at the end of 2015.

¹ Foreign direct investment is hereinafter abbreviated as FDI. Foreign direct investment in China refers to foreign companies and economic organizations or individuals including overseas Chinese, compatriots from Hong Kong, Macao and Taiwan, and enterprises registered overseas, using currency, physical objects, technology, etc. to establish the enterprises in China.(Lu, Xiongwen, 2013. *Dictionary of Management*(Shanghai Lexicographical Publishing House)..)

² China's reform and opening up is the policy of internal reform and opening up to the outside world initiated by the Third Plenary Session of the Eleventh Central Committee in December 1978. It was proposed and founded by Deng Xiaoping, the top leader of the People's Republic of China. It can be summarized as "internal reform, opening to the outside world". It is one of the basic policies formulated since the Third Plenary Session of the 11th Central Committee. It is a major component of socialism with Chinese characteristics and constitutes Deng Xiaoping Theory. It was included in the party constitution at the 15th National Congress of the Communist Party of China and became one of the basic national policies of the People's Republic of China. This reform implements a mixed economic model. In agriculture, the household contract responsibility system (commonly known as "big contract") is implemented, allowing private enterprises to no longer be owned by the state and allowing foreign investment and other policies. This decision has changed the situation in mainland China that has been closed to the outside world for nearly 30 years since 1949. On July 15, 1979, the central government officially approved the Guangdong and Fujian provinces to implement special policies and flexible measures in foreign economic activities. In 1992, the South talks released China's reform into a new stage. Reform and opening up have brought about tremendous changes in China. The national policy of reform and opening up has rapidly developed the economy of the Chinese mainland and improved the living standards of the Chinese people. Group, China Economic System Reform Research, 2008. *China's reform and opening up*(China Financial and Economic Publishing House).

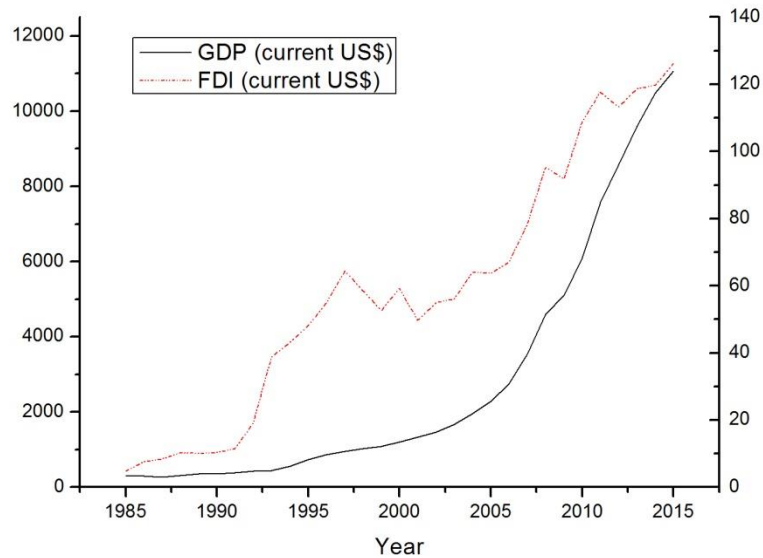
³ In 1984, Deng Xiaoping pointed out: "China's development cannot be separated from the world. It is not a short-term policy but a long-term policy to invigorate the internal economy and open up to the outside world." In the Third Plenary Session of the 12th Central Committee of the Communist Party of China in 1984, the "Decision of the Central Committee of the Communist Party of China on Economic System Reform" clearly stated that since the Third Plenary Session of the Eleventh Central Committee, we have regarded opening up as a long-term basic national policy as a strategic measure to accelerate socialist modernization. Significant results have been achieved in practice" Gao, Shangquan, 2009. Participated in the drafting of the central government's three decisions on economic system reform, *Centennial tide*, 25-30.

⁴ According to the average exchange rate of the year, the conversion to the US dollar is USD 216.15 billion in 1978 and USD12,144.93 billion in 2015.

⁵ According to the average exchange rate of the year, the conversion to the US dollar is USD 226.25 in 1978 and USD9,043.90 in 2015.

CHAPTER 1

Figure 1-1 The Development of GDP And FDI in China From 1985-2015



Source: GDP from World Bank Data; FDI from China National Bureau of Statistics from 1985-2015

The inflow of FDI has made up for the shortage of initial capital, increased the capital investment, brought advanced technology and management experience, promoted the optimization of regional economic structure, and became a necessary force to support local economic development (Baichuan and Jianming 2003). However, the distribution of FDI in China is mainly unbalanced (See Figure 1-2), which indirectly widens the gap in economic development among regions. Under the influence of the gradient development in the eastern coastal areas of China, FDI inflows are mostly concentrated in the eastern part of China.⁶ The eastern coastal regions are the central gathering place for multinational companies. Although the absorption of FDI in the west and central areas has increased in recent years, the share has never exceeded 15%.⁷

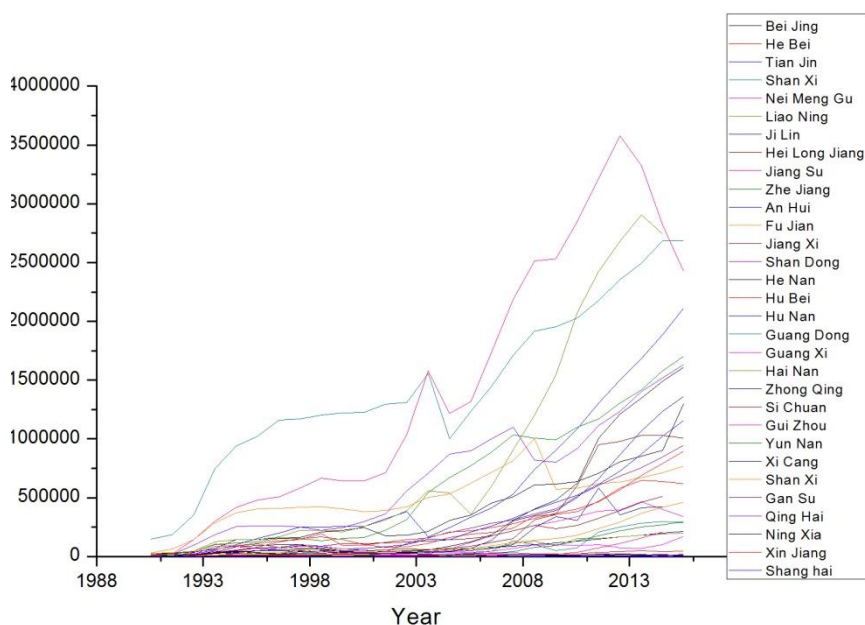
⁶ This imbalance in geographical distribution is based on the guiding policy theory of the two overall situations at the time. China's "two overall situation" theory refers to the acceleration of opening up to the outside world in coastal areas, so that the coastal areas can develop first, thus promoting the development in the inland. The inland must take care of this overall situation. Conversely, when the development reaches at a certain time, the coast will have to exert more strength to help the inland, and the coast will also obey this overall situation. (Deng, Xiaoping, 1993. *Selected Works of Deng Xiaoping, Volume III* (Beijing: People's Publishing House). 277-288)

⁷ It is calculated by statistical calculation of data in recent years. The data comes from the China Statistical Yearbook.

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Figure 1-2 The FDI of provinces and autonomous regions in China from 1985-2016

Unit: USD 10000



Source: China National Bureau of Statistics (2017)

Note: This figure includes 31 provinces, autonomous regions, and municipalities directly under the Central Government.

Henan Province is a vitally important economic and agricultural province in the central part of China, but the amount of FDI attracted is relatively small compared to the coastal areas. In 2015, Henan's GDP ranked fifth among China's 31 provinces, municipalities, and autonomous regions⁸. As a significant economic province in central China, the lack of FDI has become an important factor restricting the rapid economic development of Henan Province. From the statistical data, the actual use of FDI in Henan Province has undergone significant changes in recent years. The Henan government strives to implement the national strategy of the Central Plains Economic Region⁹,

⁸ Since the People's Republic of China resumed exercising sovereignty over Macao on December 20, 1999, it has been divided into 23 provinces, 5 autonomous regions, 4 municipalities directly under the Central Government, and 2 special administrative regions, with a total of 34 first-level administrative regions. For historical reasons, Taiwan, Hong Kong and Macao deal with the statistics separately on their own, so they were basically excluded from official statistics in China.

⁹ The Central Plains Economic Region (CPEP) is based on the Zhengzhou metropolitan area and supported by the Central Plains urban agglomeration. It covers the economic region of Henan Province and its surrounding areas. It is located in the center of China and has a clear national functional area. The key development areas, important geographical location, developed transportation, huge market potential and profound cultural heritage have an important strategic position in the overall reform and development of the country. On the National Day of 2011, the construction of the Central Plains Economic Zone is raised to a national strategy. In November 2012, the State Council officially approved the "Central Plains Economic Region Plan." (Henan Daily News Group, 2011. *Guidance of the State Council on Supporting Henan Province to Accelerate the Construction of Central Plains Economic Region*(Henan University Press).) The strategic positioning is: the industrialization, urbanization, informationization and agricultural modernization coordinated development demonstration zone, the country's important economic growth plate, the strategic fulcrum of regional coordinated development, the important modern comprehensive transportation hub, and the historical and cultural heritage zone of China. The Central Plains Economic Region covers the entire province of Henan and parts of Shanxi, Shandong, Anhui, and Hebei, covering 30 prefecture-level cities and 3 municipal districts and counties in 5 provinces, with a total area of approximately 290,000 square kilometers. (The State Council approved the planning of the Central Plains Economic Region,

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expands the scale of foreign capital and improves the quality and level of foreign capital utilization(Henan Provincial Government 2013). In 2015, the actual use of FDI in Henan Province was USD 16.86 million, ranking first among the six central provinces^{10,11}. Henan Province has unique characteristics that other provinces and regions do not have, such as the excellent geographical location, large agricultural base, abundant labor force, and low wages, etc.

Moreover, due to differences in natural resources, historical traditions, economic bases and development, and institutional policies, there exist also substantial differences in the scale of attracting FDI in Henan Province. The regional distribution of FDI in Henan Province is hugely uneven. 50% of FDI flows were concentrated in two cities, Zhengzhou and Luoyang, and the remaining 16 cities accounted for only 50% in 2015.¹² What is the unique regional reason that led to the rapid increase in the level of FDI in Henan Province? What caused it to stand out in the six central provinces? What led to its introduction of less investment compared to the coastal areas and what caused its imbalance? These issues are worth pondering and further be researched.

FDI inflows are often accompanied by technology spillovers that have self-reinforcing effects and may lead to increased returns(Fan 2002). Under the premise of uneven distribution of foreign capital, this effect will make the distribution imbalance more dangerous, causing the backward areas unable to benefit from advanced technology and management, and further widening the inter-regional gap (Guilong 2013). FDI leads to more poverty, isolation, neglect of local capabilities, and more immense inequality(Wei, Yao and Liu 2009). Regional disparity is an identified problem in China's development (Gries and Redlin 2009). Since the start of reforms¹³ in 1978, spectacular economic growth and poverty reduction in China have been accompanied by sharp rises in inequality and increasingly frequent manifestations of social tension through the unrest of various types (Fan, Kanbur and Zhang 2011). Rapid economic growth in China over the last three decades has been accompanied by an ever-rising inter-regional inequality (Wei, Yao and Liu 2009). There is no doubt that the level of economic difference among social groups or disparity among provinces in a country can reflect its economic performance (Gurgul and Lach 2011). Sun (1998) argued that the

<http://finance.people.com.cn/n/2012/1122/c1004-19658267.html>

¹⁰ The six central provinces refer to the six provinces in the central hinterland of China, including Henan Province, Shanxi Province, Hubei Province, Anhui Province, Hunan Province, and Jiangxi Province. In March 2004, Premier Wen Jiabao proposed a development plan to promote the rise of the central region for the first time in his government work report. The central region mainly refers to these six provinces.

¹¹ The data are from the 2016 China Statistical Yearbook.

¹² The data comes from the statistical yearbook of Henan Province.

¹³ The reform here refers to the reform and opening up policy from 1978.

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difference in FDI distribution between inland and coastal areas has a significant positive effect on regional economic growth.

Therefore, it is necessary to make a comprehensive analysis of the regional factors affecting FDI inflow in Henan province. Regional characteristics make the distribution of FDI in different regions significantly different. Dunning's eclectic paradigm theory, proposed in the 1970s, and has been widely used in this field. This theory integrated international trade theory, location theory, and “internalization” to explain the location choice of FDI. Dunning (1988) summed up the location factors into four categories: market factors (market size and potential), trade barriers, cost factors, and investment climate. Dunning (2015) also believed that with the rapid development of economic globalization, the location choice of multinational corporations must not only consider traditional factors and costs, transportation costs, market demand patterns, and agglomeration economic benefits but also pay attention to transaction costs and dynamic external economics such as knowledge accumulation and technological innovation. The theory of FDI investment location mainly focused the theory of FDI that Dunning (1973), Dunning (1979), Dunning (1980), Dunning (1988), Dunning (1998), Dunning (2000), Dunning (2004), Dunning (2015) and Krugman (1991), Krugman (1991) successively improved. These studies involve some factors, including political risk, macroeconomic policy, market size, market similarity, labor costs, trade freedom, trade surplus, infrastructure, cultural differences, and so on. FDI's location decision-making involves a two-stage decision-making process. First, the foreign company investors must select the destination country, and then select the investment site in the determined destination country. This thesis pitches into the second stage of the decision-making process, that is, the choice of FDI location within a country or province.

1.2 Research significance

Located in the central part of China, Henan Province is the middle link between the economically developed areas in the eastern part of China and the economically backward areas in the west. The strategic deployment of the country's Rise in Central Plains has highlighted the location advantages of Henan Province. Due to the geographical location, resource endowment, and economic development level of cities in Henan, there is a significant gap in the ability of cities to introduce foreign capital. Based on the actual situation of FDI in Henan province, this thesis

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discusses the critical factors affecting the use of foreign capital in cities in Henan Province. Moreover, then the research could propose more rational ways to introduce foreign capital. The significances are as follows:

- I. Analysis of influencing factors of using foreign capital in Henan Province will provide a theoretical basis for the government. This thesis discusses the characteristics of the actual use of foreign capital, expounds the factors affecting the actual use of foreign capital in cities, takes reference for local governments how to use foreign capital, and provides technical support for the use of foreign capital to promote economic development and narrow the gaps between the regions.
- II. The analysis of the factors and conclusions affecting FDI will help local governments to consider these factors in the process of introducing FDI, instead of blindly providing preferential policies for foreign investors, they can provide targeted policies and conditional support.
- III. With the increase of China's economic openness and the guidance of the country's western development and the policy of the Rise of the Central Plains, FDI inflow has begun to spread to the central and western regions gradually. As the combined area of developed eastern and backward western regions in China, Henan Province has superior geographical advantages. Therefore, how to realize the interaction between the central and Western regions, promote the development of the western region and the rise of the Central Plains region, attract foreign capital and ultimately promote the local economic development is a problem worthy of attention.

1.3 Research objective

The purpose of this thesis research is to discover the essential regional determinants for FDI in Henan province and aims to contribute to the FDI theory and decision formulation of FDI companies through analysis of influential factors during the process of investment. The research on FDI is not only influenced by the previous literature and theories, but also by the unique regional endowment. Therefore, the factors affecting FDI can be further expanded and refined in the light of local actual development and characteristics. Based on the above research motivations and background, the purpose of this study is as follows:

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- I. To analyze the present situation and development of FDI in Henan Province.
- II. To expand and refine the factors that can affect FDI, under the existing theoretical research, combined with the unique regional characteristics of Henan Province.
- III. To explore the changes in the regional factors that affect FDI in the different stages of economic development from the perspective of the macro environment.
- IV. To explore the causal relationship between regional factors affecting FDI in Henan Province from the perspective of foreign investment demanders.
- V. To conduct questionnaires on investors and to understand the needs and perceptions of investors from the results of statistical analysis, to better integrate more specific regional factors.
- VI. Based on the research results, to summarize and make specific recommendations for the relevant government departments to refer to the formulation of policies and plans.

1.4 Research questions

With the development of global integration, the researches on the location selection of FDI have become a hot spot, and many high-quality kinds of literature have emerged. However, these studies continue the previous theories, and the differences between the data and application methods used in empirical researches are challenging to form consistent conclusions. Theories that are universally applicable to the world and that reasonably explain and predict FDI behavior in all countries have not been formed. FDI will still be limited by specific local conditions, specific scope, and specific periods. Especially in China, the region is vast, the population is large, and the regional endowment is much diversified. If the existing theoretical analysis framework is still directly applied, it is not suitable, nor is it necessarily very appropriate. The theory itself is still in the process of development and change, and the appropriateness is always relative. (Xiaojuan and Ling 2002)

Henan is a sizeable agricultural province with abundant labor resources. Moreover, Henan is in a critical period of economic transformation. Under the guidance of the government and the stage of economic development and industry updating, Henan province becomes an entire rational region that attracts the labor-intensive industrial transfer and investment from the developed coastal areas because of comparative advantage. Therefore, this thesis will discuss the labor factors, industry

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factors, and factors of production that can represent Henan's distinctive features from the macro and microlayers. When multinational companies choose their investment destinations, in addition to considering the traditional factors that constitute location advantages, the labor and industrial structure closely related to industrial upgrading from the macro perspective and local factors of production, cultural similarities from the perspective of micro-enterprises also need to be considered.

This thesis will focus on the following aspects.

- I. Research problem (1): The panel data model was established according to the FDI relevant theory to examine the factors that determine FDI in Henan Province from 1999 to 2016.
- II. Research problem (2): Henan province has prosperous labors. Therefore, different levels of labor quality, which is more representative of the characteristics of Henan, will be examined how to influence FDI in Henan Province.
- III. Research problem (3): Henan province is in a critical period of industrial upgrading. The factors affecting FDI will be made a comparative analysis to figure out the changes of factors in the different economic development stage.
- IV. Research problem (4): Henan province is in a critical period of industrial upgrading. The industrial structure closely related to industrial upgrading will also be explored.
- V. Research problem (5): Through the questionnaire, the factors that affect the FDI will be considered in more detail.
- VI. Research problem (6): Through the questionnaire, in addition to the influence of external factors, the company's characteristics will also be tested to have impacts on FDI.
- VII. Research problem (7): The case study of typical FDI companies will be made the analysis closer to the actual situation.

1.5 The analytical method, definition, and data

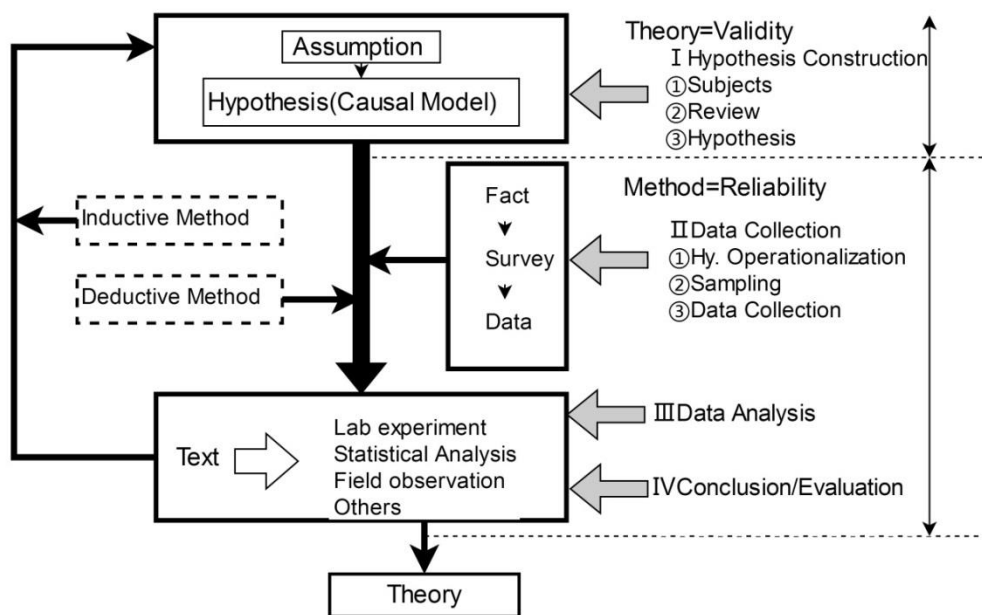
1.5.1 Analytical method

Babbie (2015) said that the two pillars of science are logic and observation. Scientific research has three dimensions: theory, data collection, and data analysis. The scientific theory involves the logical level of science, data collection is the level of observation, and data analysis is the expectation and actual observation. Social science can help us understand the events themselves

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and the causes of the events. Social science theory studies collective behavior rather than individual behavior, and its purpose is to explain the regularity of collective behavior patterns. Science usually involves the alternating use of two logics: deduction and induction. The inductive method is from individual to general, from a series of specific observations to the discovery of a particular pattern to some extent represents the order of all given events. The deduction is from the general to the individual, from the logical or theoretical expectation to the observation that the expected model does exist. The analytical methods used in this thesis are deductive and inductive. The specific research operations are shown in the Figure1-3 below.

Figure 1-3 The Theory Construction Cycle



Source: Kawamura (2017), Extending Universities to Cultivate Local Industry: Based on the Experiences of University Reform in Kyoto

Firstly, this thesis expounds the development and current situation of the utilization of foreign capital in Henan Province and makes a descriptive analysis of the status quo of the 18 cities of Henan Province from 1999 to 2016 according to the Henan Statistical Yearbook.

Secondly, qualitative analysis will be combined with quantitative analysis. The thesis quantitatively analyzes the actual use of foreign capital in Henan Province, collects data and sets up models to quantitatively analyze the factors affecting FDI in Henan Province, thus demonstrating that the endowments between cities have significant impacts on attracting FDI. The focus of this part of the empirical analysis is to reclassify the geographical factors affecting FDI based on previous studies and try to expand and refine the new interpretation factors reflecting the

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characteristics of the region. In the research, it is necessary to collect and synthesize all aspects of the data. Due to the limitations of existing statistical data, the empirical analysis may encounter difficulties in finding data, and the statistics of existing data may be inconsistent. Therefore, some processing of these data is required. Besides, due to the particularity of certain influencing factors, it is difficult to quantify them. It can only be measured by choosing some proxy indicators. The selection of proxy indicators will bring a certain degree of deviation. Particular attention should be paid to the selection of proxy indicators to avoid the lack of empirical support for conclusions due to the inaccessibility or fragmentation of some data in the process.

Thirdly, in the field survey, the questionnaire is designed for the research objects and hypothesis. After determining the content of the questionnaire, questionnaires will be sent to the relevant subjects to answer the questions, and the collected questionnaires will be statistically analyzed to verify the research hypotheses. Analytical methods include statistical analysis methods such as factor analysis, cluster analysis, and linear structural equation modeling¹⁴.

However, sometimes, models and theories built outside in the application area cannot accurately depict the real world, it is necessary to conduct researches with the residents themselves through fieldwork. For example, it is not always necessary to apply the theory or model formed in the continental area to a geographically, economically, ecologically unique area such as Shimane where the area is small, the land is diffused, and is far from a large market. It does not necessarily bring about the expected result(Matsushima 2009). In order to clarify the uniqueness of the region that cannot be seen from the theory and model, it is necessary to consider the way of life unique to that region, the social structure, the relationship between humans and nature, etc. (Matsushima 2009). The study of sociology also has a substantial content of concreteness based on specific people, situations, institutions, places, etc.(Matsushima 2009). Moreover, the inclusion of social relationships as a local resource is a unique point of the study. Therefore, in the last part of this thesis, the method of sociology will be used to conduct targeted interviews with specific companies and people in order to reveal the real face of society better.

¹⁴ The structural equation model is hereinafter referred to as SEM.

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1.5.2 The definitions of this thesis

1.5.2.1 The definition of FDI

From a national or an international point of view, the International Monetary Fund and the Organization for Economic Co-operation and Development¹⁵ define foreign direct investment as an emphasis on the willingness of investors to have sustained and significant control over the management of the overseas entities involved (OECD 2008). IMF (1993) defines FDI as a category of international investment that reflects the objective of a resident in one economy (the direct investor) obtaining a lasting interest in an enterprise resident in another economy (the direct investment enterprise). The lasting interest implies the existence of a long-term relationship between the direct investor and the direct investment enterprise, and a significant degree of influence by the investor on the management of the enterprise. Root (1994) defines FDI as the way for companies to make long-term equity investments in order to gain control of management, and FDI is not just a simple transfer of monetary assets, but also all assets such as management and management capabilities, technical knowledge, capital and the process of expanding the overseas market together.

FDI in China refers to foreign enterprises and economic organizations or individuals (including overseas Chinese, Hong Kong, Macao, and Taiwan compatriots and enterprises registered overseas) in China. Therefore, the research objects include FDI from Hong Kong, Macao, Taiwan, and the companies established by Chinese people abroad. The foreign direct investors generally adopt the modes of Sino-foreign joint ventures, Sino-foreign cooperative enterprises, wholly foreign-owned enterprises, and cooperative development. Other investment ways include compensation trade, processing, and assembly¹⁶. FDI can be divided into inward FDI and outward FDI according to the direction of investment. Inward FDI refers to foreign investment in the domestic and foreign capital enters; while outward FDI refers to the domestic investment in foreign countries and the outflow of domestic capital. The FDI studied in this thesis refers to the inward FDI.

¹⁵ It is hereinafter referred to as IMF.

¹⁶ It was stipulated by the Foreign Investment Enterprise Law and passed by the 18th meeting of the Standing Committee of the Ninth National People's Congress of the People's Republic of China on October 31, 2000. This law is to adjust the economic relations of foreign-invested enterprises that occur in the process of the state's coordinating economic operation. There are three laws on Foreign-invested enterprises: the Law of the People's Republic of China on Foreign-invested Enterprises, the Law of the People's Republic of China on Sino-foreign Joint Ventures and the Law of the People's Republic of China on Sino-foreign Joint Ventures.

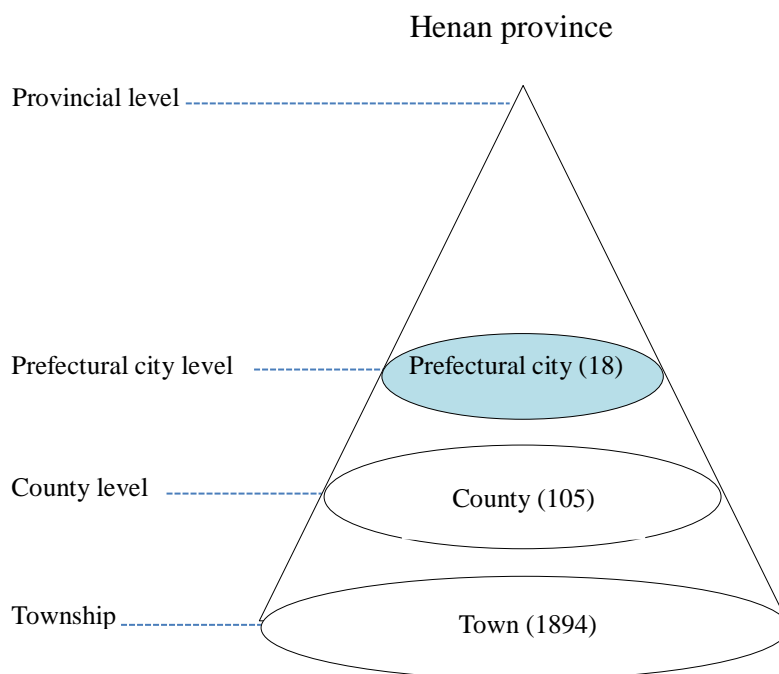
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1.5.2.2 The level of research regions

The thesis takes the administrative district as the regional standard and adopts the secondary administrative district –the prefectural cities as the research objects. The specific administrative level is shown below in Figure1-4. The reasons are as follows.

- I. The prefecture-level city is the minimum administrative level for making administrative decisions and implementing government policies. The reason why this thesis chooses this level of administrative division is that the formulation and implementation of effective policies are based on this level of governments.
- II. When FDI enterprise decides to invest in a particular area of Henan, it generally does not choose the third administrative division region (county level) with inconvenient transportation and inadequate facilities. In addition, each prefecture-level city area has almost the same economic, social, natural, historical, and backgrounds. In other words, the factors affecting FDI are universally applicable in the second administrative division.

Figure 1-4 Administrative divisions of Henan Province



Note: Made by the author according to the administrative division of Henan Province.

1.5.2.3 Industrial classification

This thesis will examine the FDI industry distribution and influential factors of FDI in the process of industrial upgrading. Industrial classification will be used in the third chapter, the fourth

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chapter, and the fifth chapter. The industry classification is especially shown in Table 1-1.

Table 1-1 Industrial classification

	China's national industry classification (GB-T4754-2002)	Industry classification
A	Agriculture, forest, pasture, fishing industry	The primary industry
B	Mining	
C	Manufacturing	The secondary industry
E	Construction	
D	Electricity, heat, gas and water production and supply	
F	Wholesale and Retail	
G	Transportation, warehousing and postal services	The tertiary industry
H	Accommodation and catering	
I	Information transfer, software, and information technology services	
G	Financial	
K	Real estate	
L	Leasing and business services	
M	Scientific research and technical services	
N	Water, environment and public facilities management	
O	Resident services, repairs, and other services	
P	Education	
Q	Health and social work	
R	Culture, sports, and entertainment	

Note: "FDI companies and industry" are classified according to the industry in "Chinese national economy, business classification (GB-T 4754-2002)"

1.5.3 Data and investigation material

The thesis analyzes the influencing factors of FDI of 18 cities in Henan Province using the method of Generalized Least Squares Method model¹⁷ from 1999-2016, and the sample size is 324 in chapter 4. The data sources are from the *Statistical Yearbook of Henan Province*, the *China City Statistical Yearbook* and the statistical bulletins of various regions in Henan province. The data used in Chapter 5 comes from questionnaires conducted in the fieldwork between January and April 2018. After screening, 201 questionnaires were used. In the subsequent analysis, factor analysis, reliability analysis, cluster analysis, variance analysis, and structural equation model¹⁸ analysis were adopted. In the sixth chapter, three typical FDI companies were interviewed, investigated, and analyzed qualitatively. (See Table1-2)

¹⁷ It is hereinafter referred to as GLS.

¹⁸ It is hereinafter referred to as SEM.

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Table 1-2 Data and investigation material description

	Data1	Data 2	investigation material
Data property	Panel data	Cross-Sectional data	Interview
Source	Henan statistical yearbook China City Statistical Yearbook Statistical bulletins	Field investigation Questionnaire	Field investigation
Year	1999-2016	2018	2018
Region	Henan Province 18 cities	Henan Province 18 cities	Henan Province
Sample size	324	201	
Analysis method	GLS model	Factor analysis Reliability analysis Cluster analysis Variance analysis SEM analysis	Sociology analysis
Chapter	The fourth chapter	The fifth chapter	The sixth chapter

1.6 Major findings

In the literature review in Chapter 2, some articles and researches make the detailed analyses of FDI and found statistically significant relations to some determinants (e.g., GDP, Wage, and Labor, innovation, political environment, agglomeration, economics, geography, economic openness of the market, and infrastructure). Moreover, most of the research objects are concentrated in coastal areas or crucial areas such as the western, central, and eastern regions. National and provincial researches are the focus.

In the situation and development of FDI in Henan Province in Chapter 3, FDI not only changes significantly in the process of development but also has a significant imbalance in the industry distribution, the source of the country and the geographical distribution.

In Chapter 4, the thesis analyzes the various regional factors affecting the location distribution of FDI by constructing 18-years panel data GLS models of 18 cities in Henan province from the perspective of a macro level. It shows that FDI in Henan province tends to flow to regions with high GDP, fast GDP growth, relatively low openness, high agglomeration, better development of the primary and secondary industry. As for the labor quality in attracting FDI inflow, in the transitional society and take-off stage, when the leading industry is the labor-intensive industry, low-educated workers are more popular, and wages have a negative effect. When in the process of the industry

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optimizes and upgrades, the demand for high-education workers increases, and as an indirect measure of labor quality, wages began to have a positive effect on FDI. Concerning the industrial structure, in the context of Henan's economic stage, the industries with comparative advantages are the primary and secondary industry, which have a positive effect on FDI. Moreover, the tertiary industry without sufficient comparative advantage leads to its negative effect on FDI.

In Chapter 5, the study conducts field surveys, designs questionnaires, collects data and establishes SEM from the perspective of foreign investment enterprises- the micro level and find out when the politic environment, economic environment, production environment, and cost are better, the more enterprises go to invest and set up companies and factories in Henan province. Larger companies are quite interested in the government's incentives. Companies with a long investment period initially value policy support from the government and transportation infrastructure. Companies with Chinese background have the innate cultural traction in investing in China, and the government can actively use the advantages of culture to attract more companies to invest.

In Chapter 6, in the analysis of interviews with companies, it is found that the government's rule of man and administrative intervention are severe and even becomes vital and unique factors in attracting FDI.

1.7 Contribution

There are many kinds of literatures and theories about FDI. Although it is an important topic, compared with studies in substantial FDI (inward FDI and outward FDI) countries such as Europe, the United States, and Japan, not only is the study of China's FDI generally backward, let alone the province in the middle region of China. As FDI increase, scholars began to explore the determinants of attracting FDI in different regions of China. Most investigations focus on the coastal areas or take large parts of China as the research object (Chunlay 2003; Liu, Daly and Varua 2012; Luo, Brennan, Liu and Luo 2008). So far, no systematic research has been conducted on attracting FDI at the city level in Henan Province. It is unclear which local factors in Henan Province have attracted FDI. Based on the current lack of researches on FDI in Henan Province, and the unique regional and policy background of Henan, this thesis mainly considers the following issues and conducts the

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empirical analysis that the previous researches did not cover. It will be the essential content and the innovation of this study.

I. Although previous studies emphasized the expansion and in-depth study of regional factors, or use different perspectives and methods for exploration, no researches are combining local economic development stages and industrial transformation. Henan has unique regional characteristics and is in a critical period of economic development and industrial upgrading. FDI flow with the transfer of industries and the factors closely related to the leading industries at the particular stage will undoubtedly have significant impacts on the FDI. The thesis combine FDI theory and empirical research with Rostow's theory of economic growth to analyze in depth the impact of Henan's unique regional factors and industrial structure on FDI inflows in specific economic stages.

II. As for the human capital in attracting FDI inflow, the quality of the labor is basically measured by the number of students in higher education (Cheng and Kwan 2000; Lu 1997; Sun, Tong and Yu 2002) and the people engaged in scientific research (Braunerhjelm and Svensson 1996; Chen 1996; Sun, Tong and Yu 2002) that may critically influence the foreign investment. However, for Henan Province, where labor-intensive industries are dominant, a representative variable is insufficient to satisfy analysis that is more detailed. This study uses three education levels to examine the effect of different level labor quality on the FDI inflow in the distinct economic stage.

III. The industrial structure closely related to the stage of economic development should also be the focus of research, and it is the place that was rarely touched by previous researches.

IV. Few studies have studied the regional factors that attract FDI from the micro level-enterprise perspective in the form of questionnaires, and few scholars have investigated factors of production as an essential factor of FDI. The study will integrate the variables related to factors of production for a holistic test and use the form of questionnaires, the statistical analysis of the collected questionnaires to make the verification.

V. In interviews with companies surveyed, it was found that in China, especially in the Mainland, the rule of man and private relations have even become critical factors in introducing investment. Clan local forces also have an impact on FDI.

1.8 Analytical structure

This thesis takes the regional factors of location selection of FDI in Henan Province as the research object and entry point. Firstly, the status quo of FDI in Henan Province is comprehensively analyzed. Based on the existing theoretical basis of FDI, the influencing factors in the particular background or uncovered factors in the previous researches or literatures are combined with the unique regional characteristics of Henan Province for more detailed analysis. It also provides corresponding feasible policy recommendations for the coordinated development of Henan's regional economy.

First, it is necessary to study the situation of FDI in Henan Province to understand the unique regional background of Henan Province. Then empirically analyze the regional factor of determining FDI from two aspects. One is an empirical analysis using city-level macro data from the national statistical units; another is an empirical analysis using corporate microdata from the fieldwork. The first empirical analysis is to conduct panel data analysis of regional factors affecting FDI from the macro-level perspective and to grasp the trends of corresponding regional factors that attract FDI in different economic development stages. The data obtained in this part is derived from the official statistical yearbook, which is the part that cannot be reached using the micro-data obtained from field surveys. Secondly, the study chose to conduct a field survey to analyze the regional reasons why foreign investors decided to invest in the relevant regions from the perspective of micro-enterprise. Factors that are more specific must be only conducted through on-site investigation supplemented with typical cases, which is also the part that cannot be reached using the macro data in the yearbook and will be more in line with the actual reality. By utilizing the analysis results, it can be expected to present effective policies for attracting FDI to the economic planners of the investing regions.

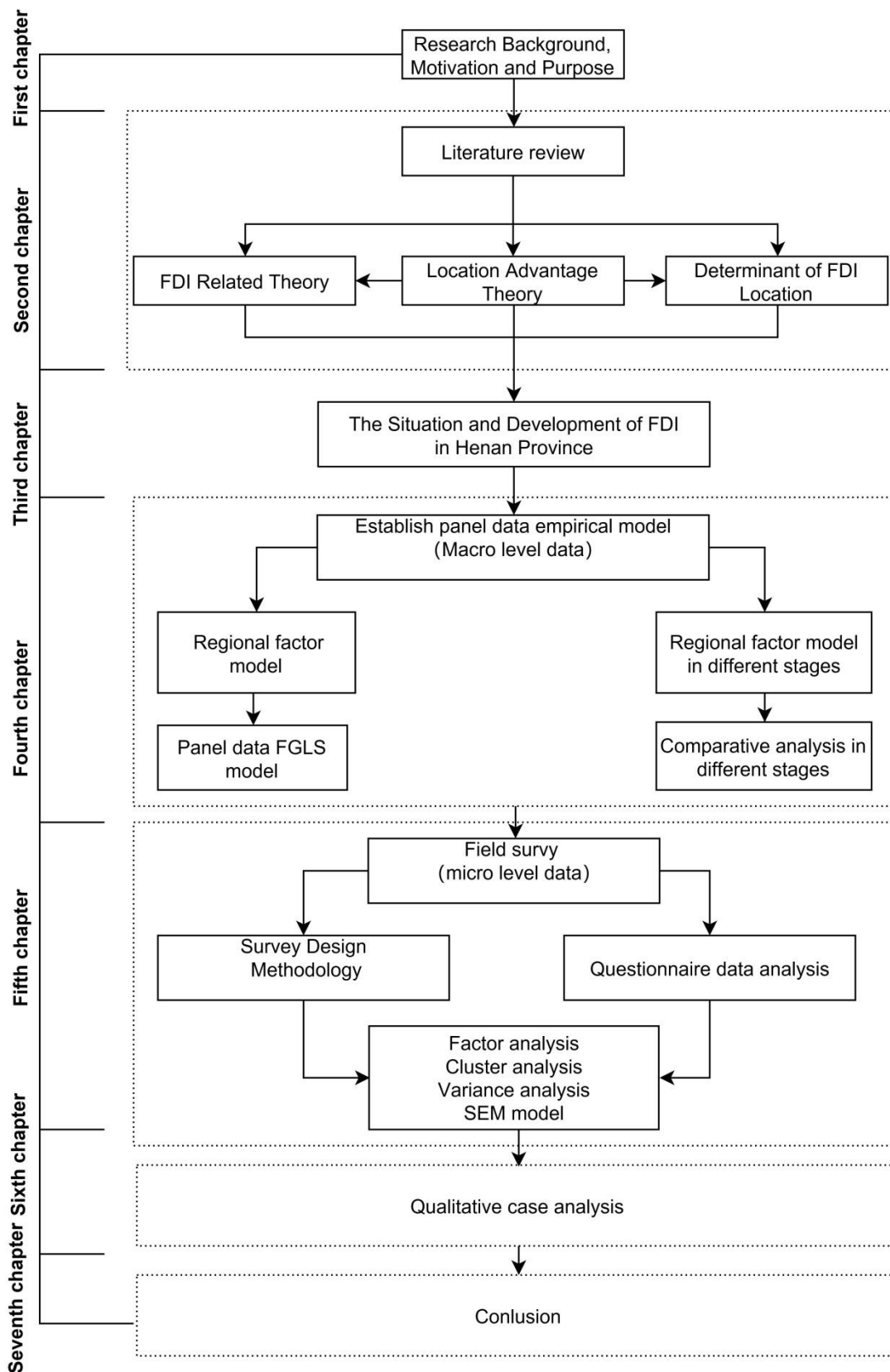
The whole thesis is divided into seven chapters. The first chapter is the introduction, introduces the background and significance of the topic, and introduces the research ideas and methods. The second chapter reviews the existing literatures and discusses the related theories of FDI. The third chapter provides the development of Henan FDI, analyzes the current situation of FDI distribution in Henan. The fourth chapter establishes the theoretical framework, introduces the methods and sources of data, and uses official statistics to analyze the empirical results from the macro level. The fifth chapter carries out the design of questionnaires and statistical analysis methods, and interviews

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with investors to understand the operation of foreign investors and the main factors of FDI from the micro level perspective of enterprises. In the sixth chapter, three typical companies are selected for case analysis. The seventh chapter summarizes the whole thesis, draws conclusions, and makes implications. The research process is as shown in Figure 1-5 below.

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Figure 1-5 The Research Process and Structure Diagram



Note: Made by the author

CHAPTER2 LITERATURE REVIEW

This chapter will first outline the relevant FDI theories, as the theoretical basis of the empirical research in the following chapters, and secondly, review the past empirical literatures.

2.1 Theoretical foundations of the determinants of FDI

2.1.1 Competitive advantage theory

In 1960, Hymer (1960) applied the monopoly theory of traditional industrial organization theory to analyze the FDI by multinational corporations in his Ph.D. dissertation “*International Operations of National Firms: A Study of Direct Foreign Investment.*” Kindleberger (1969), Caves (1971) and other scholars supplemented and developed his theory, which made this theory become the earliest and the most influential independent theory of international direct investment. The theory argued that a foreign direct investor owns some kinds of exclusive or monopolistic advantage not available to local firms (Bürgel 2012). This advantage is the main reason for the company to decide to invest in other countries. According to Hymer (1976), the MNEs appear due to the market imperfections that led to a divergence from perfect competition in the final product market. Caves (1996) considered that the efforts made by various countries in attracting FDI are due to the potential positive effects that this would have on economic.

This theory is based on the industrial organization theory, but it cannot explain the investment behavior of the developing countries without monopoly advantages and the reasons why enterprises with monopoly advantages abandon the ways of exporting and technology license transferring but choose to invest directly.

2.1.2 Product life cycle theory

According to the theory of product life cycle, Vernon (1966) argues that the life of a product is the whole process of a new product from entering the market to being expelled from the market, which is divided the following four stages, the introduction stage, the growth stage, the mature and the decline stage. This cycle occurs in countries with different levels of technology. Efficiency-seeking multinational firms move production into regions with cheaper production costs in order to enhance competitiveness as long as production can be standardized (Vernon 1966).

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These stages do not occur at the same time. The technology gap between different countries reflects the disparity of the competitive status of the same product, which decides the change of international trade and international investment.

Based on the theory of international trade, the product life cycle theory analyzes the relationship between FDI and foreign trade. The theory of international trade and international direct investment is integrated into a unified analytical framework. Its premise is perfect competition. However, this theory is mainly aimed at the final product market, and cannot explain the foreign investment phenomenon of resource seeking and technology opening.

2.1.3 International theory

“Internalization” was first proposed by Coase (1937) in his book *The Nature of the Firm*. This theory tried to explain the growth of transnational companies and their motivations for achieving FDI (Denisia 2010). From the middle of the 1970s, Buckley (1974), Casson (1973) and Canadian scholar Rugman (1975), took the developed countries as the research object, based on Coase (1937)’s the new firm theory and assumptions of the incomplete market, settled the theory of multinational companies in the book “*The Future of Multinational Enterprise*” (Buckley and Casson 1976). The internalization theory stressed the ability of the enterprise to transfer the advantage at a lower cost within the internal organization and regards it as the real cause of the enterprise's investment.

The internalization theory analyzed the nature of transnational corporations from product exchange and production organization and explained the internal formation mechanism of transnational corporations. It applies to both developed and developing countries and is one of the most influential theories of international direct investment. However, the theory cannot explain the location choice of FDI.

2.1.4 Marginal industry expansion theory

Professor Kiyoshi Kojima, Hitotsubashi University, developed comparative advantage theory in the mid-1970s, which is also called the theory of marginal industry expansion. If a country is at a disadvantage when producing a product and international trade is based on comparative advantage, FDI will occur. (Kojima and Ozawa 1984). Kojima believed that the analysis of FDI should be based on macroeconomic perspectives, especially from the principle of the international division of

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labor. The heart of this theory is that FDI should be carried out in turn from the industries in which the country (investing country) is already at or about to be in a relatively disadvantaged position. These marginal industries are also industries with comparative advantages or potential comparative advantages in the host country. Investing in the marginal industry can make the host country show or enhance the comparative advantage that is not manifested or not fully manifested due to lack of capital, technology, business management skills, etc., to expand the comparative cost gap between the two countries, and to create conditions for the quantity and profitable trade.

The theory of marginal industry expansion analyzes the motivation of FDI. The purpose of the investment is that investors can obtain the raw materials and intermediate products of the host country, while the host country obtains the industry with comparative advantage, which enables the two countries to play their roles and achieve a win-win situation fully. The investment in the theory of marginal industry expansion and Product life cycle theory is mainly the vertical investment of developed countries to developing countries, which is different from the horizontal direct investment between developed countries. Also, this theory is consistent with the actual situation of Japan's FDI in a specific historical period and explains the FDI behaviors of Japanese companies.

2.1.5 The location theory

This theory refers to the spatial position and structural relationship between human social things. The representatives of classical location theory are German economists, Thünen (1826), Weber and Friedrich (1929). In 1826, Von Thünen and Hall (1966)¹⁹ proposed models of rural location through the difference in transport costs between the producing and consuming areas. Indeed, the prominent regional scientist Walter Isard (1956) has called von Thünen “the father of location theorists”. Webb put forward the concept of “location factor” for the first time in 1926. His location theory highlighted the general rule of the location decision. An industrial enterprise location decision depends on two factors of transport costs and labor costs, plus the adjustment factor of industrial agglomeration location. A representative of modern location theory is the German economist Christaller (1933) and Lösch (1939). Christaller (1933) proposed a central place theory in 1933. Later, a female economist Massey (1973) pointed out that the importance of social and cultural factors. This innovative view became an essential part of modern location theory in the

¹⁹ It is the English version, published in 1966.

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90s. Wallerstein (1974) and Modelski (1972) underlined the influence of social culture, structure, and social system on location choice or location formation. The most authoritative founder of the modern location theory is Krugman (1991) and Porter (1990). The modern location theory is centered on industrial agglomeration, pointing out that “scale economy” is the most important source of competitiveness. The industrial chain formed by many companies forms economies of scale, which can reduce costs, improve efficiency, and form the core competitive advantage of the industry. New location theory also mentions the importance of natural resources, transportation costs, cross-border investment, sociocultural, and policy factors (Entrepreneurship, historical and cultural traditions, the institutional framework, and the government policy).

2.1.6 Eclectic paradigm theory

Reading University professor Dunning and Buckley (1977) proposed the Eclectic Paradigm theory in “*Trade Location of Economic Activities and the MNE: A Search for an Eclectic Approach.*” It mainly includes ownership advantages, internalization advantages, and location advantages.

Ownership Advantage: (trademark, production technique, entrepreneurial skills, returns to scale) (Twomey 2002). Ownership specific advantages include the advantage of asset ownership and the advantage of transactional ownership. The advantage of asset ownership refers to the advantages of tangible assets and intangible assets. The former refers to the production equipment, plant, capital, energy, and raw materials and other monopolistic advantages; the latter does to patents, proprietary technology, trademarks and goodwill, technology development and innovation capabilities, management, and marketing techniques, etc. The advantage of transactional ownership refers to the advantages of multinational management, reasonable allocation of various resources, and various risks.

Internalization Advantage: (Existence of raw materials, low wages, special taxes, or tariffs) (Twomey 2002). Internal transactions are safer than non-equity transactions. The higher the net benefits of internalizing cross-border intermediate product markets, the more likely a firm will prefer to engage in foreign production itself rather than license the right to do so (Dunning 2000).

Location Advantage: (Advantages of own production rather than producing through a partnership arrangement such as licensing or a joint venture) (Twomey 2002). It refers to the advantages of the investment environment in the host country, including the local foreign

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investment policy, economic development level, market size, infrastructure, resource endowment, labor, and cost, etc. If the environment of investment is well, then this region or country will be attractive to the multinational operation of the enterprise.

Dunning and Pearce (1975) particularly pointed out that location advantage is one of the sufficient conditions for FDI of multinational corporations. Dunning (1973) divided the location factors into four categories:(1) market factors;(2). trade barriers; (3)cost factors; (4)investment environment. In the later research, Dunning (1993) further analyzed the motivation of transnational business and comprehensively summarized the location factors of the host country's attraction of FDI. He believed that such factors in the host country include natural and human-made resources and the spatial distribution of the market; the price and quality of products (labor, energy, raw materials, etc.); investment preferences and barriers; infrastructure. As one of the follow-up advantages of transnational corporations 'internationalization, location advantage plays an increasingly important role. Dunning (1998)also reformed the original theory of location advantage, added many new factors to the analysis and compared and analyzed the different influencing factors that transnational corporations considered when making investment location choice in the 1970s and 1990s(See Table 2-1).

2.1.7 The new theory of trade

The "new theory of trade" first appeared in a series of papers of Dixit and Norman (1980), Lancaster (1980), Krugman (1979) (1980), and Helpman (1981). Their main point of view is the non-comparative advantage. Specific countries and trading are not necessarily just for the sake of obtaining their advantages in resource differences. They trade only in order to increase returns. The new trade theory introduces the views of industrial organizations in investment activities into trade theory and gets rid of the embarrassment of perfect competition. In the 70s, Dixit and Stiglitz (1977) established a consistent and easy-to-operate model of imperfect competition, so increasing returns no longer relied on pure external economic assumptions. The increase in labor market income and imperfect competition will produce agglomeration effects of labor. They incorporate market size, transportation costs, and other factors into the theory of FDI.

Table 2-1 Factors Affecting the Location Choice of Value-added Activities of Multinational Corporations

FDI type	The 1970s	The 1990s
A.Resource-seeking	<ol style="list-style-type: none"> 1.Availability of natural resources, price, and quality 2.Development of export facilities for the production of resources 3.Government restrictions on FDI 4.Incentives 	<ol style="list-style-type: none"> 1. The upgrading of resource quality, the 2.processing and export factors of products. 3. Local partners, knowledge, and capital-intensive resources.
B.Market-seeking	<ol style="list-style-type: none"> 1. Domestically dominated, supplemented by neighboring regional markets 2.Cost of wages and materials 3.Transportation costs and tariffs 4.Import permit 	<ol style="list-style-type: none"> 1.Large-capacity, fast-growing domestic and adjacent regional markets 2.Availability and price of technology and professionals 3.The related companies and their competitiveness 4.National and regional infrastructure quality and institutional competitiveness Space agglomeration, local support services 5.Government's macroeconomic regulation and control policy 6. Increased demand for knowledge-intensive departments to be geographically close to customers 7. The regional and local development agencies
C.Efficiency-seeking	<ol style="list-style-type: none"> 1.Cost of production 2.Freedom of trade 3.Aglomeration 4.Incentives 	<ol style="list-style-type: none"> 1.More emphasis on B2, B3, B4, B5, B6, B7 factors, especially concerns about knowledge-intensive and integrated behavior 2.Eliminate economic behavior restrictions 3.Aglomeration area
D. Strategic assets seeking	<ol style="list-style-type: none"> 1.Knowledge assets and markets related to specific advantages of ownership 	<ol style="list-style-type: none"> 1.Acquisition and price of collaborative assets 2 Communicate with local intangible knowledge, thought and learning Enter different cultures and institutional systems to meet different customer needs and preferences

Source: Dunning (1998)

2.1.8 The emergence and development of FDI theory and FDI determinants

In the 1960s, the theory of FDI in this period was based on classical industrial organization theory and international trade theory, mainly aimed at FDI of American enterprises and analyzed and explained the characteristics and decisions of FDI in various countries. In the mid-1970s, FDI theory began to shift to the microeconomics. Based on property rights theory, internalization theory

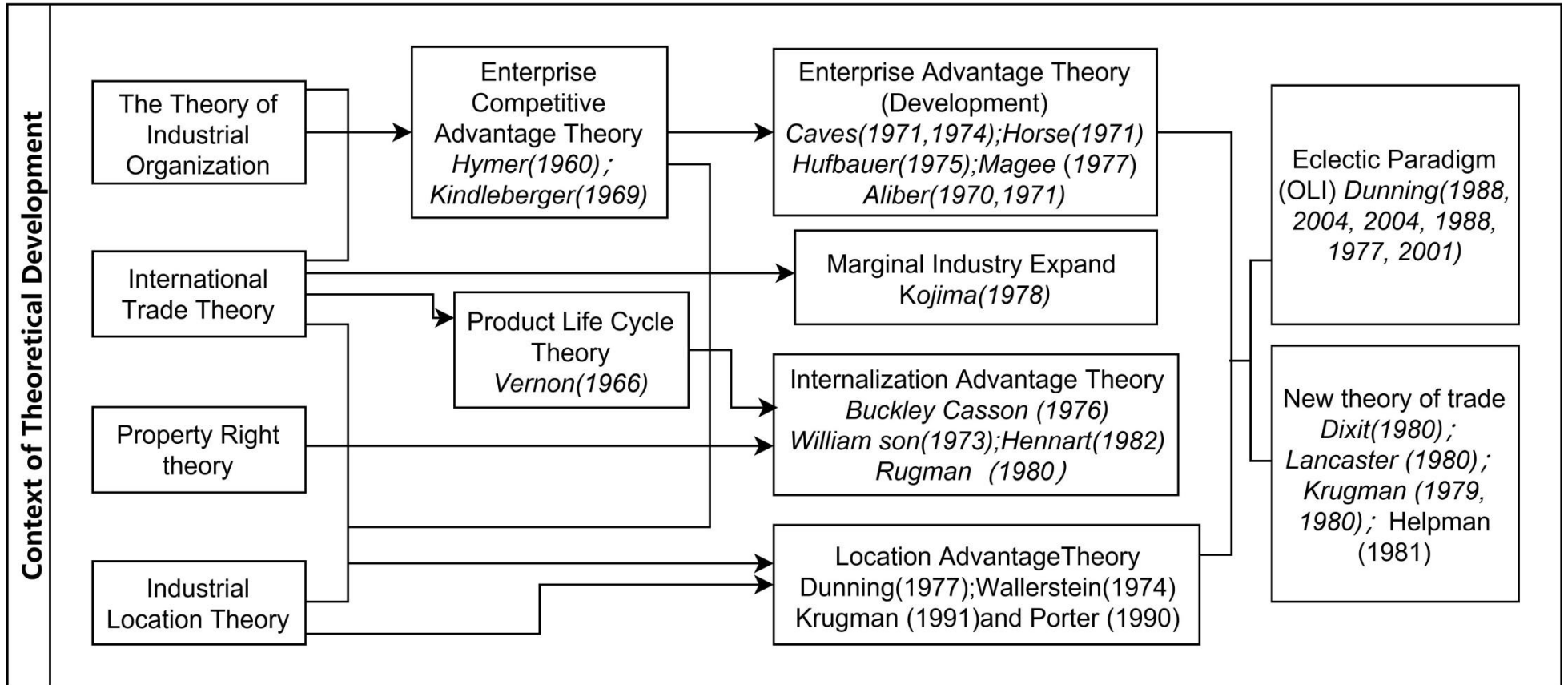
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has become mainstream, and researches have turned to FDI multinational corporations. This shift is mainly due to the emergence of multinational companies in developing countries, especially in newly industrialized countries (Yang 2001). Since the 1980s, Dunning's eclectic paradigm theory has become a popular theoretical framework for FDI analysis. These theories and developments are summarized below (See Figure 2-1 and Table 2-1)

With the rise of FDI in developing countries, the researches about the motives of enterprises in developing countries to invest are also gradually enriched and improved. After analyzing the competitive advantages of Indian multinationals, small-scale technology theory (Wells Jr 1977) has promoted the development of technology localization theory (Lall, Chen, Katz, Kosacoff and Villela 1983). Harms (2002) explored the relationship between political risk and FDI flow using the data of 55 developing countries during the period from 1987 to 1995, and the results show that political risk has a significant impact on foreign capital inflows. Foster and Alkan (2003) 's analysis of the situation in Turkey has proved that weakness of the industrial base, political instability; the high inflation rate and corruption have negative impacts on FDI inflows.

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Figure 2-1The emergence and development of FDI theory



Note: Made by the author.

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Table 2-2 Summary of the main theories of FDI and determinants

Theory	Determinants	Author(s) (year)
Competitive advantage theory	Ownership benefits (product differentiation), economies of scale, government incentives	Hymer (1976), Kindleberger (1969)
	Imperfect competition	Caves (1971)
	Following rivals, responding to competition in the domestic market	Kindleberger (1969)
Product life cycle	Production function characteristics	Vernon (1966)
Internalization	Market failures/inefficiencies	Buckley and Casson (1976)
	Know-how (leads to horizontal internalization), market failures (leads to vertical internalization)	Hennart (1991), (Hennart 1982; Teece 1985), Casson (1987), Teece (1981)
Marginal industry expansion theory	Capital, technology, skills, management	Kojima and Ozawa (1984)
	Labor, energy, materials, components, semi-finished products, commercial, legal, education, transport, and communications, ideology, language, culture, business practice, and political systems; economies resulting from the centralization of research and development (R&D), production, and marketing	Dunning (1993), Krugman (1991), Porter (1990)
Location advantage theory	Taxes, promotional incentives, infrastructure, infrastructure, market, agglomeration	Coughlin, Terza and Arromdee (1991), Hill and Munday (1991), Luo and Peng (1999)
	The benefit of owning productive processes, patents, technology, management skills	
Eclectic paradigm (OLI –Ownership, location, internalization)	Advantage of locating in protected markets, favorable tax systems, low production and transport costs, lower risk	Dunning and Buckley (1977), Dunning (1979)
	Advantage of internalization cutting transaction costs, lowering risk of copying, technology, quality control	
New theory of trade	Market size, transport cost, Factor endowments	Dixit and Grossman (1982), Brander and Krugman (1983), Helpman and Razin (1983), Helpman (1984)

Note: This Table some made by the author, some cite from (Assunção, Forte and Teixeira 2011)

2.2 Empirical literature

In order to understand the status quo and characteristics of China's inward FDI research, the

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related articles mainly come from two databases. One is the web of science (made by the American Institute of Science and Technology Information, including SCIE, SSCI, CPCIGS, CPCIGSH, etc.). Another is the Chinese academic periodicals network-publishing library provided by CNKI resource retrieval platform.²⁰ In these two databases, “China” and “Foreign Direct Investment” or “FDI” are used as the search term, and “title” for the retrieval field to limited regional and research range; “Factors” or “Determinants” are used as search terms and the “subject” is used as a search field to obtain as many relevant literatures as possible. The time for collecting the literatures is limited between 1990 and April 1, 2017.^{21,22} From 1990 to 2017, there were 461 articles in the Science Database website and 650 articles in CNKI.

2.2.1 Annual distribution of related literature

As can be seen from the articles in the web of science database, the overall trend from 1990 to 2017 is increasing year by year. There was a rising inflection point in 2007 (28 articles), an increase of 180% over the previous year (10 articles). In the CNKI database, the number of researches first rose and then stabilized. In 2006, there was a rising turning point (62 articles). Compared with the previous year, the growth rate was 100%, which peaked in 2007 (72 articles), and then declined in 2013 and has remained stable to this day (See Figure 2-2).

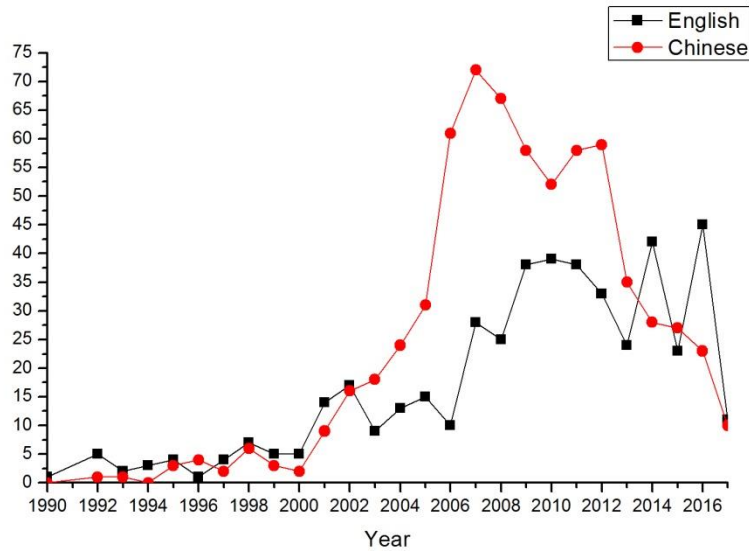
The total number of published articles in China is higher than that of international publications, indicating that the researches are mainly based on Chinese domestic researches. However, since 2007, the number of international publications has increased significantly compared to 2006, indicating that researches are moving internationally.

²⁰ The web of science is mainly an English literature database, and the CNKI is a Chinese literature database.

²¹ This section was written in May, 2017, so all the collected articles are due in April 1, 2017. The time since the beginning of 1990 was chosen because after the reform and opening up, China's economic development has undergone tremendous changes, and the impact of FDI has begun to mature slowly. The background of the early research papers is very different from the actual situation in China at present. And pre-1990 articles are rarely uploaded to online databases.

²² When I searched in the China database, I removed the words “China” to search, because China's articles are basically the default study on China. If “China” is added, the search results will be reduced.

Figure 2-2 Amount of articles every year (from 1990- April.2017)



Note: Made by the author.

2.2.2 Distribution of countries and institutions

The articles made by China ranks first in the absolute superiority in the web of science database. China has 248 papers, accounting for 53.8% of the total articles; followed by the United States, 86 publications, accounting for 18.66%; followed by the United Kingdom, Australia, Taiwan, South

Table 2-3 Distribution of countries/territories

Field: Countries/Territories	Record Count	% Of 461
China	248	53.80%
USA.	86	18.66%
England	52	11.28%
Australia	37	8.03%
Taiwan	23	4.99%
South Korea	16	3.47%
Canada	15	3.25%
Japan	13	2.82%
Singapore	8	1.74%
Germany	6	1.30%

Korea, Canada, Japan, Singapore, and Germany. So far, 21 countries have researched the determinants of China's FDI (See Table 2-3).

There are about 91 international institutions to proceed with research work²³. Australian National University ranked first with 13 articles, followed by Peking University with 12 articles, and Zhejiang University ranked third (See Table 2-5).

²³ I listed the institutions that published more than 5 articles.

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Table 2-5 The citation counts of institutions in web of science database

Institutions	Record Count	Total Citation Counts	The Average Citation
National University Singapore	7	32	4.57
Hong Kong Poly tech University	5	31	6.2
Nanyang Technology University	2	29	14.5
Fudan University	5	29	5.8
Aston University	4	29	7.25
Illinois State University	6	27	4.5
Peking University	12	20	1.67
Fed Reserve Bank	1	17	17
Kean College New Jersey	1	17	17
Syracuse University	1	17	17
Shanghai Institution of Mech & Elect Engineer	1	17	17
University Michigan	5	15	3

Table 2-4 The institutions of international literature

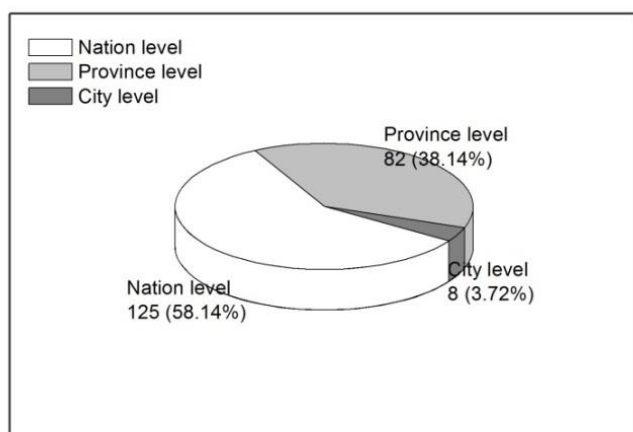
Field: institutions	Record Count	% of 461
Australian National University	13	2.82%
Peking University	12	2.60%
Zhejiang University	11	2.39%
Renmin University China	10	2.17%
Xiamen University	10	2.17%
Hong Kong University	9	1.95%
University London	9	1.95%
Hong Kong Polytech Univ	7	1.52%
Harbin Institute Technology	7	1.52%
National University Singapore	7	1.52%
Illinois State University	6	1.30%
University Int Business Econ	6	1.30%
University Leeds	6	1.30%
University Nottingham	6	1.30%
Zhejiang University Technology	6	1.30%

In terms of the influence of the articles, National University Singapore has the highest citation frequency, followed by Hong Kong Polytechnic University, Nanyang Technology University, Fudan University and Aston University in third place (See Table 2-4). Although the number of international literatures is small, the quality is relatively high.

2.2.3 Articles selection and summary

In the end, 53 English articles and 162 Chinese articles were selected. The screening process is shown in Figure 2-4. In the final selection, some representative articles were obtained through the institutions, their influencing factors, and the number of citations. Of all the articles, there were 125 (58.1%) at the national level, 82 (38.1%) at the provincial level, and 8 (3.7%) at the prefecture-level city (See Figure 2-3).

Figure 2-3 The region level of research

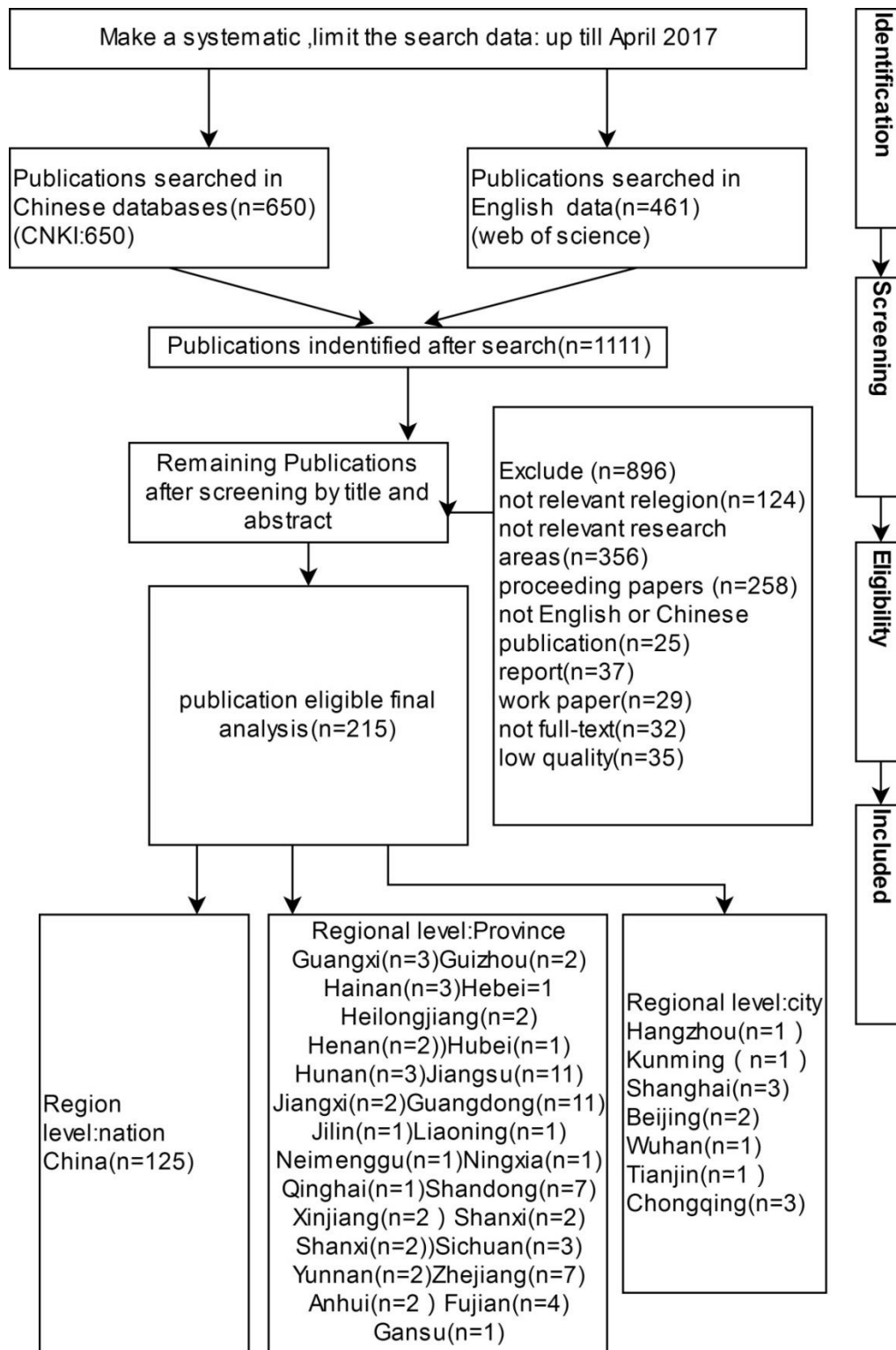


Note: made by the author

Mainstream researches are concentrated at the national level, with a greater focus on China's overall and eastern, central, and western regions. The current research area is still concentrated in coastal areas and national support areas, while articles on provincial-level research in the central and western regions are still few. Considered the issue of aging, the selected articles are all published after 2000. The articles are summarized below.²⁴ (See Table 2-6)

²⁴ In the screening process, some articles are not in China's geographical scope. Some articles are about China's outward foreign direct investment. Some articles study the impact of FDI on the domestic economy, politics, and technology spillovers. Some articles study the relationship between carbon emissions and FDI. For these research articles, they can only be deleted in the literature selection.

Figure 2-4 Flow chart of literatures search and selection



Note: Made by the author.

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Table 2-6 The regional determinants of FDI²⁵

Author	Methodology	Data and region	Determinants and Results
Coughlin and Segev (2000)	OLS	1990-1997 China	Market size(+) Wage(-) Human capital(+)
Cheng and Kwan (2000)	GMM	1985-1995 China	Market size(+) Wage(-) Agglomeration(+) Infrastructure(+)
Nicholas, Purcell and Gray (2001) ²⁶	Questionnaire	1997 China and other countries	Tariff Firm size Location Incentives
Sun, Tong and Yu (2002)	Panel data (FEM)	1986-1998 China	Market size(+) Wage(-) Agglomeration(-) Infrastructure(+) Openness (+)
He (2002)	GLS	1990-1997 China	Location(+) Agglomeration(+) Infrastructure(+) Wage rate(+) Urbanization(+)
Honglin Zhang (2005)	OLS	1980-2001 China	Market size(+) Wage(-) Tariff(+) Policy(+)
Qiu (2005)	Case study	2001-2003 Shanxi China	Personal networks(+) Institutional involvement(+)
Yang Xiaoming (2005)	GLS model	1995-2002 China	Market size(+) Infrastructure(+) Wage(-) Education(+)
He (2006)	Panel data (FEM,REM,OLS)	1995-2002 China	Market size(+) Infrastructure(+) Wage(-) Education(-) Economic power decentralization Fiscal decentralization Market decentralization
Xing (2006)	Panel data (FEM)	1981-2002 China	Wage(-) Exchange rate(+)
Cassidy and Andreosso-O'Callaghan (2006)	OLS model	1996 China	Education (+) Location(+) Infrastructure(+)
Jin Xiangxi (2006)	OLS	1999-2004 China	Market size(+) Infrastructure(+) Institutional environment(+)
Naohiko (2006)	Gravity model	1997-2003 China	Market size(+) Labor productivity(+) Distance(-)
Cheng (2007)	Nested Logit Model	1992-1996 China	Market size(+) Infrastructure(+) Wage(-) Agglomeration(+) Openness(+)
Kang and Lee (2007)	OLS model	1988-2002 China	Market size(+) Infrastructure(+) Wage(+) Policy(+)

²⁵ Some articles do not indicate specific results and will be explained in subsequent footnotes.

²⁶ This article is about FDI ranking for each region

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Du, Lu and Tao (2008) ²⁷	Logistic model	1993-2001 China	Institutions	Agglomeration	Market size(+)	Infrastructure(+)	Wage(+)	Education(+)			
Luo, Brennan, Liu and Luo (2008) ²⁸	GLS	1999-2005 China	Resource(+)	Policy(+)	Infrastructure(+)	Industrialization (+)	Wage(+)	(-)			
Qing (2008)	PCA	2001-2004 China	Establishment of an indicator system								
Chen (2009)	GMM	1985-2004 China	Market size(+)	Infrastructure(+)	Wage(-)	Education(+)	Policy(+)	Agglomeration(+)			
Lin and Tsai (2008)	Questionnaire ANP	2006 Zhejiang	Build location selection evaluation criteria								
Cole, Elliott and Zhang (2009)	Panel data (FEM,REM)	1998-2003 China	Market size(+)	Infrastructure(+)	Openness (+)	Education(+)	Wage(-)				
Lin (2010)	MLE	1996-2005 China	Market size(+)	Policy(+)	Network(+)	Strategy(+)	Firm size(+)				
Feng (2011)	OLS	2000-2010 China	Market size(+)	Policy(+)	Infrastructure(+)	Openness (+)	Human capital(+)	Wage(-)			
Yin, Ye and Xu (2014)	Logistic model	2007-2011 China	Proximity to market(+)	Proximity to labor resources(-)	Proximity to knowledge(-)	Market size(+)	Infrastructure(+)	Industrialization (+)	Location(+)	Agglomeration(+)	Firm size(+)
Hui and Chan (2014)	Panel data (FEM)	2005-2010 China	Market size(+)	Infrastructure(+)	Location(+)	Cost(-)	Exchange(-)	Tourist(+)			
Liu, Daly and Varua (2014) ²⁹	Panel data (FEM)	2002-2010 China	Market size	Infrastructure	Location	Wage	Human capital				
Duanmu (2015) ³⁰	Logistic model	1999-2007 Wuxi, Jiangsu	R&D	Firm age	Firm size	Fixed assets					
Iida (2015)	Quality analysis	China ³¹	Political risk								
Yong, Yew, Huang and Chin (2016) ³²	OLS	1994-2008 China	Market size	Wage							

Note: In the results of the fourth column, the plus sign in parentheses indicates that the factor has a positive effect, and the minus sign in parentheses indicates that the factor has a negative effect.

²⁷ The aggregation and the institution are divided into more indicators.

²⁸ Wages have different effects in different situations.

²⁹ The results show that different factors have different effects on FDI. So the regression results are no longer labeled in this article.

³⁰ This study mainly compares the impact of external financing on FDI in different industries, so the effects of influencing factors on FDI in industries are different, and the effect on FDI is no longer labeled.

³¹ This paper uses qualitative analysis, so there is no specific time range.

³² Comparing different regions, there is no consistent result.

The theory of FDI used to focus on the micro (enterprise) level, then emphasized the macro (national) level, and discussed the determinants of FDI and the impact of the latter on the former. It can be classified into the following two categories. The first is to study the impact of regional characteristics on investors' final decisions. The second is the determinants of FDI location in a country (province, state). Empirical research methods can also be divided into two categories. The first is to investigate the determinants of foreign investment motivation and location choice through questionnaire and field survey. Secondly, through macro data use econometric analysis to analyze factors affecting location selection and test their significance.

Questionnaire survey analysis. Questionnaire survey is not the mainstream method to study the location choice of FDI, and the relevant literatures are rare in the mainstream academic journals. Nicholas, Purcell and Gray (2001) conducted a questionnaire survey of 134 Japanese companies investing in Thailand, Australia, Singapore, Malaysia, Indonesia, and China, and found political and economic stability, market size, labor costs, and other non-policy factors are the main factors when investing in these countries. Policy factors such as import tariffs, import tax credits, taxation, and subsidy policies are secondary factors that need to be considered. Yunshi Mao (2004) conducted a questionnaire survey of 230 Japanese companies investing in China and analyzed the motives and location determinants of FDI in China. Market potential, cost, and parent company's global strategy are the critical factors affecting Japanese companies' direct investment in China.

Econometric analysis. Most empirical studies use statistical analysis methods. The determinants of the location choice of FDI could be caught through the analysis of the relevant data (cross-sectional data, time series data, and panel data). The analytical methods mainly include continuous variable (aggregation) method and discrete variable (decomposition) method (Cheng, 2007). The continuous variable method is the linear regression analysis of FDI inflow or accumulation. The discrete variable method uses observable regional characteristics (such as infrastructure, market capacity, etc.) to test the behavior of each enterprise.

Coughlin and Segev (2000) applied the spatial dependence hypothesis to investigate the inflow distribution of FDI in various provinces in China. The results show that the increase of FDI absorbed by neighboring provinces has a positive impact on the absorption of FDI in a province, that is, the spillover effect of FDI. Moreover, market size, the level of wages, and the quality of education (measured by illiteracy) also have significant impacts on FDI.

Cheng and Kwan (2000) use the dynamic panel regression model to estimate by the generalized method of moment (GMM). The conclusion is that market size, wages, and infrastructure will significantly affect the investment decisions of FDI in mainland China, and there is positive and significant agglomeration effect of FDI in mainland China. Sun, Tong and Yu (2002) adopted panel data in various provinces and autonomous regions of China as samples and analyzed them in the fixed-effect method. The conclusion also shows that market size, wages, infrastructure, and openness will significantly affect the total FDI inflow. The ratio of the amount of accumulated investment in the country as an explanatory variable also supports the hypothesis of the agglomeration effect, but the effect is negative.

He (2002) explored the impact of information cost and agglomeration economy on FDI location choice. He believed that FDI behavior in China faces many information asymmetry and external uncertainty. The analysis results show that the location choice of FDI in China depends on location, information cost, and agglomeration. Wage and urbanization are also essential location factors.

Qiu (2005) argued the impact of personal network and institutional involvement on FDI in Shanxi Province in the form of case studies and interviews and found that they play essential roles in FDI. Moreover, the relationship among FDI, personal network and institutional participation have a hierarchical structure: the larger the foreign parent firms, the more institutional involvement, while the smaller the foreign parent firms, the more personal networks are involved. Yang Xiaoming (2005) analyzed 178 Chinese city FDI factors of location selection and aggregation effect using panel data and the generalized least squares regression (GLS). The results show that the per capita GDP, land cost, agglomeration effect, traffic condition, and education level are the main factors that influence the location selection.

Based on the traditional factors affecting FDI, He (2006) also examined the impact of three policy reforms of economic decentralization, fiscal decentralization and marketization, and decentralization on FDI. Studies have shown that provinces with higher power and fiscal constraints on economic issues have more significant FDI flows; market decentralization may significantly improve the investment climate and attract foreign investment, while government intervention in economic activities may hinder foreign investment. In addition, more legal expenditures in one province are associated with smaller flows of FDI, while subsidies to loss-making state-owned

enterprises may lead to more foreign investment. Jin Xiangxi (2006) chose Chinese cross-section data from more than 210 prefecture-level cities in 2002, using the OLS method, and analyzed the location of FDI. The results show that the labor cost had a noticeable effect, and market size, infrastructure condition, institutional environment (including education and research conditions, the development of local financial conditions and the degree of openness) have significant impacts on the FDI location.

Naohiko (2006) used data from 1997 to 2003 to analyze the determinants of location choice of Japanese enterprises in 28 provinces (autonomous regions and municipalities directly under the central government) by the gravity model. The results show that the scale of economies and labor productivity is the main factors that affect Japanese business investment. The distance from Japan is a barrier to investment. So Japanese companies are keen to invest in the eastern coastal areas, such as the nearest Shandong Province, Liaoning Province, and Jiangsu province.

Cassidy and Andreosso-O'Callaghan (2006) took the Ordinary Least Square (OLS) to analyze Japanese enterprises in 30 provinces, autonomous regions, and municipalities (excluding Chongqing). The results show that higher education, inland water transportation, and the coastal location are the most important factors that influence Japanese investment in China, and the effects of wage level (efficiency, salary) and market size (GDP) are not apparent. Kang and Lee (2007) used enterprise-level data of Korean foreign affiliates in China to study the determinants of the location of Korean multinationals. Cheng (2007) adopted a conditional logit model to empirically analyze the changes in location choices of Japanese investors in response to China's recent shift in its development strategy from the East Coast to the Inland.

Qing (2008) used data of 31 provinces, autonomous regions, and municipalities from 2001 to 2004. According to the evaluation index system of regional competitiveness, divided the 119 indexes into nine modules of regional competitiveness, and sorted the provincial competitiveness. The paper made an empirical analysis of the relationship between FDI location choice and regional competitiveness using econometric quantitative analysis method, the regression model, and the multiple regression models.

Chen (2009) focused on the impact of the aggregation effect on FDI. He tested the agglomeration effects within and between regions. The result showed that urbanization, foreign capital agglomeration, and industrial diversity have positive impacts on the location of FDI. Using

the panel data of 98 inland cities from 1999 to 2005, Luo, Brennan, Liu and Luo (2008) determined the location preference variables of FDI in China's inland areas. Cole, Elliott and Zhang (2009)'s results confirmed that FDI was attracted to the more efficient provinces and actively participated in the anti-corruption struggle.

Lin and Tsai (2008) established an evaluation standard for the location selection of FDI hospitals in Zhejiang through the ANP method. Lin (2010) chose Taiwan IT companies that have invested in the mainland of China as research objects and found that network connections, market expansion, and incentive policies have positive impacts on FDI intentions. Feng (2011) researched FDI in the service industry. Yu and Shen (2013) LIN examined the geographic proximity, especially the proximity to Chinese knowledge, markets, and labor resources to understand how an embedded spatial environment in a region affects the preferences of firms investing in China. Hui and Chan (2014) analyzed the development trend of FDI in China's real estate market. A panel regression model for determining the factors of FDI in China was established. Liu, Daly and Varua (2014) analyzed the main determinants of FDI inflows in high-tech manufacturing industries in four geographic regions of China. Duanmu (2015) believed that the significance of external financing is magnified in industries that rely heavily on external financing, high technology, low tangibility, and high inventory. Van Looy and Shafagatova (2016) explored how Japanese private investors engage in cross-border economic activities in response to political instability.

2.3 Summary

The study of FDI began in the 1960s. In terms of theoretical research, the product life cycle theory(Vernon 1966), competitive advantage theory(Hymer 1960), internal advantage theory(Buckley and Casson 1976), marginal industry expansion theory(Kojima 1973)and eclectic paradigm theory (Dunning 1973; Dunning 1980) all explain the choice of FDI from different angles. In the 1990s, with the development of new economic geography, factors such as agglomeration, culture, and institutions became new perspectives for explaining the location choice of FDI(Changhong 2011).

With the deepening of theoretical research, empirical researches on FDI location selection have begun to appear in large numbers, especially at the end of the 20th century. FDI in developing countries attracted the interest of scholars (Ang 2008) (Harms 2002) (Foster and Alkan 2003) and they found the cost, infrastructure(Wei, Luo and Zhou 2010), market size(Ho 2004), and

government policy (Wei, Luo and Zhou 2010) of the host country are essential factors in attracting FDI. Academic research in China started relatively late. From the reform and opening up to the end of the 20th century, the location distribution and determinants of FDI in China began to receive more and more attention. FDI inflows are highly concentrated in the eastern coastal provinces such as Guangdong and Fujian, and the proportion of inland areas is insufficient. The provinces and regions of the Yangtze River Basin are second only to the eastern coastal areas, and they account for a particular proportion, showing a trend of “northern advancement.” (Canfei 1999; He 2002; He 2006)

With the improvement of the utilization level of foreign capital, some characteristics and changes have appeared in the research. First, research objects are more specific and detailed. The study begins to shift to different types of foreign companies, such as manufacturing FDI (Fu and Wu 2017; Liu, Daly and Varua 2014), IT industry((Lin 2010), foreign banks (Yeung, He and Zhang 2015), foreign-funded financial companies (Xie and Wang 2004), FDI from Taiwan (Chen, Wei and Chen 2017; Lin 2010) and FDI in service sector(Feng 2011). Second, the research field tends to be diversified. In addition to the macro analysis of the provinces and regions, it also focuses on the distribution of foreign capital in urban agglomerations (Chen 2009; Hu, Wu and Wen 2014) and urban interiors (Hanmin 2008; Huang and Dennis Wei 2014; Qiu 2005). Finally, the influencing factors are more comprehensive. The early researches were mainly based on the neoclassical trade theory, paying more attention to the influence of traditional factors such as location, cost, labor, and other factors. With the development of other theories, factors such as agglomeration, regional institutions, geographic proximity (Yu and Shen 2013), real estate((Hui and Chan 2014), financing(Duanmu 2015)and path dependence began to be incorporated into the theoretical framework(Hanmin 2008; Huang and Dennis Wei 2014). There are also some studies that have conducted in-depth discussions on investments from specific countries(Cheng 2007; Kang and Lee 2007; Van Looy and Shafagatova 2016).

Given the existing literatures, the following aspects need to be further strengthened. (1) Articles are mostly about FDI in developed provinces and urban agglomerations, but less attention is paid to the new changes of FDI distribution in inland provinces. (2) Most of the existing works of research provide general explanations for the location choice of foreign capital and lack of investigations on the changes of influencing factors in different stages of economic development. (3)

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In the period of economic development and industrial upgrading, there is a lack of research on the factors of industrial structure and upgrading. (4) Although there are many studies on labor costs and labor quality, Henan Province, which has large labor forces, there is no further detailed study on the different quality of labor forces. (5) It does not involve factors of production that the company attaches great importance. (6) Research on local surveys and interviews is rarely done.

This thesis will combine the economic growth theory, especially the industrial structure, to conduct in-depth and meticulous research on FDI in Henan Province, compare and analyze the labor quality and cost closely related to industrial upgrading in different periods. At different stages of economic development, the corresponding factors will also change. In order to better adapt to the actual situation, the thesis conducted fieldwork, investigated foreign companies, and issued questionnaires. During the interview, some foreign respondents combined factors of production to discuss the choice of location. Therefore, this study carried out an individual analysis of the impact of factors of production on FDI. In order to more deeply study the development of FDI, it is also indispensable to select some particular companies to conduct sociology investigations.

CHAPTER3 THE CURRENT SITUATION OF FDI IN HENAN PROVINCE

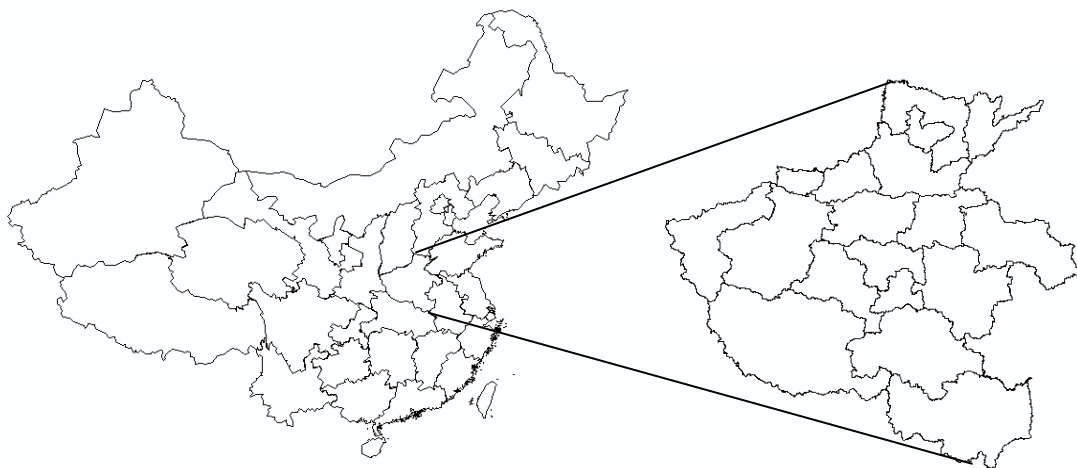
This section respectively expounds location of Henan Province, the development of FDI in different periods, industrial distribution, the modes of FDI, source countries, the regional distribution of FDI, and regional difference analysis.

3.1 The location and development of FDI

3.1.1 The location

Henan Province is situated in the Middle East of China and the middle and lower reaches of the Yellow River. The province is located between latitude 31 ° 23'-36 ° 22 'and longitude 110 ° 21'-116 ° 39'E, in the junction of coastal areas, central and Western regions, which is the middle ground for China's economic development from the east to the west. The province covers a total area of 167,000 square kilometers and occupies the 17th place in China's provinces, accounting for 1.73 % of the whole area of the country (See Figure3-1). At the end of 2015, the total population of the province was 107.22 million, with a permanent population of 94.8 million. In 2015, the total GDP of the province was CHY 37010.25 billion, an increase of 8.3 % over the previous year.

Figure 3-1 The map of Henan Province



Note: Made by the author using ArcGIS software.

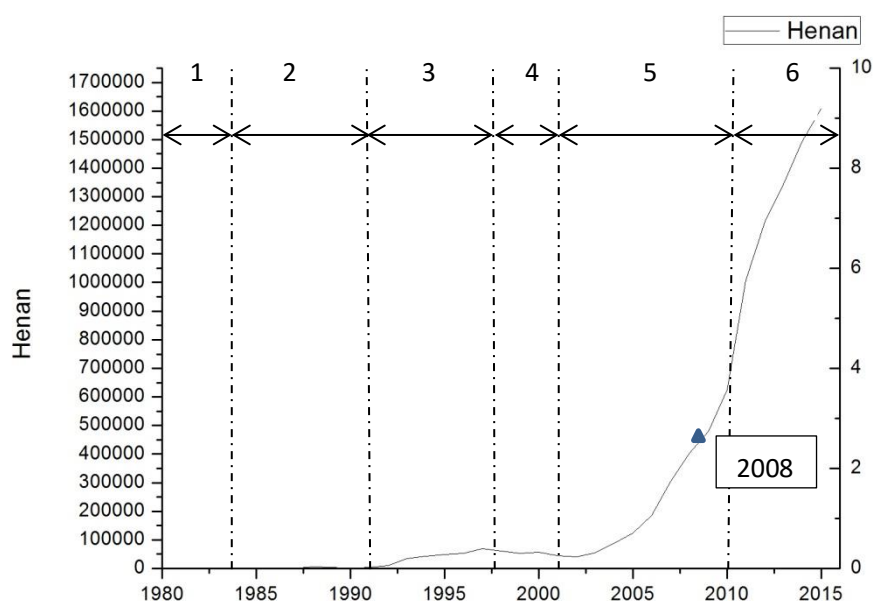
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3.1.2 The development of FDI in Henan

The scale of FDI in China has expanded recently, which has a significant influence on the development of China's economy (Chenghao 2016; Peiqian and Yansun 2007). As a sizeable economic province in Central China, Henan stepped up its foreign trade policy support and has made remarkable achievements in attracting overseas investment (Shoulong 2012). According to the changes in FDI, the development process of FDI in Henan province can be divided into the following stages (See Figure 3-2):

Figure 3-2 Inward FDI of Henan Province from 1980-2015

Unit of value: USD10000



Source: Henan Statistical Yearbook 2016

Note: 1. The amount of FDI used here is the actual amount of investment in place, rather than the amount of agreement signed. 2. The official statistics for FDI is from 1985.

The first stage: the initial stage (1979-1984)

In 1979, China promulgated the first law for the use of foreign investment, namely the *law of the People's Republic of China on Sino-foreign Equity Joint Ventures*.³³ FDI was limited to the four

³³ The Law of the People's Republic of China on Sino-foreign Joint Ventures was enacted by the People's Republic of China for the purpose of expanding international economic cooperation and technological exchanges, allowing foreign companies, enterprises and other economic organizations or individuals to establish joint ventures with Chinese companies or enterprises or other economic organizations within the territory of the People's Republic of China, with the approval of the Chinese Government, in accordance with the principle of equality and mutual benefit. It was adopted by the Second Session of the Fifth National People's Congress on July 1, 1979. The current version is the third amendment in accordance with the Decision of the 22nd Session of the Standing Committee of the Twelfth National People's Congress on Amending Four Laws, such as the Law of the People's Republic of

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special economic zones (Shenzhen, Zhuhai, Xiamen, and Shantou), and the way of utilizing foreign capital was mainly borrowing. In 1983, the initial FDI project in Henan province was “Luo Yi color printing center,” which marked the beginning of attracting FDI in Henan Province. The actual amount of foreign capital used for the project was USD 50,000.³⁴

The second stage: slow development stage (1985-1991)

At this stage, China published a series of laws and regulations to improve the country's macro investment environment. In 1986, the State Council promulgated the *Regulations on Encouraging Foreign Investment*.³⁵ In 1988, the State Council promulgated the *Supplementary Provisions of the State Council on the Development of Export-oriented Economy in Coastal Areas*.

Moreover, the Ministry of Finance promulgated the *Temporary Regulations on Encouraging Foreign Investment in Coastal Economic Open Areas to Reduce and Exempt Enterprise Income Provisions*.³⁶ These mainly stipulate that foreign-funded enterprises with export-oriented and advanced technology will be encouraged to invest in China through preferential tax policies. In 1987, the General Office of the State Council forwarded the *Circular of the State Planning Commission on the Temporary Regulations for Guiding the Direction of Foreign Investment Absorption* in 1987.³⁷ In 1988, China promulgated the *Law on Sino-foreign Joint Ventures*.³⁸ In 1987, Henan attracted USD 4.67 million (Henan Provincial Statistical Bureau 1988). There are three modes for FDI enterprises in China according to the law and regulations, namely, wholly foreign-owned enterprises, Sino-foreign joint ventures, and Sino-foreign cooperative enterprises. In 1987, the foreign investors took the mode of wholly foreign-owned and brought USD 310,000 in Henan province. In 1991, the actual FDI inflows amounted to USD 37.91 million, of which the mode of Sino-foreign joint venture enterprises made USD 32.14 million, and USD 2.83 million invested by the mode of Sino-foreign cooperative enterprises (Henan Provincial Statistical Bureau

China on Foreign-funded Enterprises, on September 3, 2016.

³⁴ <http://www.henan.gov.cn/ztl/system/2008/12/24/010111982.shtml>

³⁵ The provisions of the State Council on encouraging foreign investment were issued on October 11, 1986, by the State Council in order to absorb foreign investment and introduce advanced technology.

³⁶ The Interim Provisions on encouraging foreign investment to reduce and exempt enterprise income tax and unified industrial and commercial tax in coastal economic open zones were promulgated by the Ministry of Finance on June 15, 1988.

³⁷ At the end of 1987, the former State Planning Commission issued the Interim Provisions for Guiding the Direction of Foreign Investment Absorption, which classified foreign investment projects into four categories: encouragement, permission, restriction and prohibition, with emphasis on manufacturing.

³⁸ The Law on Sino-foreign Joint Ventures was adopted at the first meeting of the Seventh National People's Congress on April 13, 1988. Four revisions were made in 2000, 2016, September, 2016, November and 2017 respectively. On March 15, 2019, the Second Session of the Thirteenth National People's Congress passed the Foreign Investment Law of the People's Republic of China, which came into effect on January 1, 2020. The Law of the People's Republic of China on Sino-foreign Joint Ventures shall be repealed at the same time.

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1992). In 1990 and 1991, several political and international events affected investment. The actual use of foreign capital scale at this stage was increasing (See Table3-1). China's policy of attracting foreign investment actively encourages coastal areas and special economic zones. As an inland province in central China, Henan Province attracts relatively few FDI projects and inflow (See Figure 3-2).

Table 3-1 The actual utilization of FDI in Henan province from1985-1991

Unit of value: USD10000

Year	New Agreement Signed		Actually used Investment
	Number of projects(unit)	Value	
1985	29	6870	565
1986	14	2724	605
1987	31	12562	467
1988	38	1986	6436
1989	36	1681	4266
1990	50	2107	1049
1991	154	12716	3791

Source: Henan statistical yearbook, 2016

The third stage: steady growth stage (1992-1997)

In 1992, Deng Xiaoping proposed Chinese's economic reform policy in the "Southern tour talk."³⁹ In 1990, according to the different characteristics of enterprises, China formulated the Rules for the Implementation of the Law on Foreign-funded Enterprises, and revised the *Law of the People's Republic of China on Sino-foreign Joint Ventures of 1979 in accordance with the Decision on Amendment of the Third Session of the Seventh National People's Congress* on April 4, 1990. At the same time, in order to change the narrow field of foreign investment access in the previous period, guide the direction of foreign investment and broaden the field of foreign investment, in June 1995, China re-issued the *Interim Provisions for Guiding the Direction of Foreign Investment* and issued *The Catalogue of Guidance for Foreign Investment Industries*.⁴⁰ Foreign investors

³⁹ Deng Xiaoping's Southern Tour, also known as the "Southern Talk", refers to Deng Xiaoping's visits and speeches in Shenzhen, Zhuhai, Guangzhou, Shanghai and other places in southern China from January 18 to February 21, 1992. He reiterates Deng Xiaoping's theory related to reform and opening up, and expects Guangdong to develop its economy according to his "productivity-based development concept". Catch up with the four Asian dragons in 20 years. Weatherley, Robert, 2007. *Politics in China since 1949: Legitimizing authoritarian rule*(Routledge). On March 26, Shenzhen Special Economic Zone Newspaper took the lead in publishing a major editorial report entitled "The Oriental Wind Comes Spring - Comrade Deng Xiaoping Documents in Shenzhen", and focused on the main points of Deng Xiaoping's South Tour talk. The South Tour speech marked a new stage in China's reform. The most important thing in the speech of the South Tour is to speed up the reform. Jin, Mingqing, 2012. *The Important Value and Contemporary Thinking of Deng Xiaoping's "South Talk"*, *Marxist Studies* 2, 18-27.

⁴⁰ On June 20, 1995, the former State Planning Commission, the Economic and Trade Commission and the Ministry of Foreign Trade jointly issued the Catalogue of Guidance for Foreign Investment Industries and the Provisional Provisions for Guiding the Direction of Foreign Investment for the first time, thus becoming the most operational regulation in regulating foreign investment and guiding

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started large-scale investments. In 1994, the Henan provincial government performed the measures for encouraging the investment in Henan⁴¹ and the measures for the financial management of loans from the World Bank. Henan made efforts to develop infrastructure to attract investment. Zhengzhou and Luoyang established national level industrial open zones to boost high-tech industries. In 1992, the actual utilization of foreign investment stood at USD 106.91 million (Henan Provincial Statistical Bureau 2016). In 1997, the province's foreign capital utilization reached USD 647.35 million, more than six times than the size of investment in 1992 (Henan Provincial Statistical Bureau 2016) (See Table 3-2). At this stage, although there was still a gap with eastern China, the substantial scale had been steadily increasing (See Figure3-2).

Table 3-2 The actual utilization of FDI in Henan province from1992-1997

Unit of value: USD 10000

Year	New Agreement Signed		Actually used Investment
	Number of projects(unit)	Value	
1992	1053	88327	10691
1993	1727	157768	34197
1994	1011	79168	42488
1995	815	86748	47981
1996	478	92166	52566
1997	423	86799	64735

Source: Henan statistical yearbook, 2016

The fourth stage: declining stage (1998-2001)

In 1997, the financial crisis in Asia led to the great depression of the world economy. China faced problems such as deflation and insufficient demand(Foster 2009). The deterioration of the overall economic environment caused a profound impact on FDI. By 1998, the actual utilization amounted to USD 617.94 million; the investment amount decreased by nearly USD 30 million compared with 1997(See Table 3-3). In 2001, Henan attracted merely USD 358.61 million (Henan Provincial Statistical Bureau 2016). The scale of FDI dropped to the actual amount in 1993(Henan Provincial Statistical Bureau 2016) (See Table 3-3). At this stage, the total FDI showed a downward trend (See Figure3-2).

import and export trade in China.

⁴¹ In June 1994, the Regulations on Encouraging Foreign Investment in Henan Province were implemented. In September of the same year, the provincial government set up a provincial leading group on opening up.

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Table 3-3 The actual utilization of FDI in Henan province from 1998-2001

Unit of value: USD10000

Year	New Agreement Signed		Actually used Investment
	Number of projects(unit)	Value	
1998	353	57333	61794
1999	264	61832	49527
2000	237	69921	53999
2001	224	62188	35861

Source: Henan statistical yearbook, 2016

The fifth stage: the rapid growth stage (1) (2002-2009)

In 2001, China formally joined the World Trade Organization⁴², and its opening to the outside world entered a new stage. In terms of foreign investment legislation, in 2000 and 2001, in accordance with the relevant requirements of WTO, China successively revised three major foreign investment laws, namely, the *Law on the Operation of Sino-foreign Joint Ventures*, the *Law on the Operation of Sino-foreign Cooperative Enterprises* and the *Law on the Operation of Foreign-funded Enterprises*, and abolished many restrictive provisions on foreign-funded enterprises. By the provisions of WTO, the services sector, including finance, telecommunications, and so on, will be gradually liberalized. From the perspective of the investment field, the new *Catalogue of Guidance for Foreign Investment Industries*⁴³ has been implemented since 2002. Restrictions on foreign investment operation were further relaxed. Agriculture, infrastructure construction, and high-tech industries continue to be areas to encourage foreign investment. Telecommunications, electricity, and water supply have also become areas where investment can be made. With the development and change of China's economy, preferential policies for foreign investment have been adjusted timely. In 2007, the *Enterprise Income Tax Law*⁴⁴ was amended to unify the income tax of domestic and foreign enterprises. With the increase of cross-border M& A⁴⁵ investment, the *Anti-monopoly Law* was passed in 2008. The government has expanded open areas and encouraged foreign investment in high-end manufacturing, high-tech industries, modern service industries, new energy sources and energy-saving and environmental protection industries. Strictly

⁴² Hereinafter referred to as WTO

⁴³ The Catalogue of Guidance for Foreign Investment Industries and its Annexes has been approved by the State Council on March 4, 2002.

⁴⁴ The Enterprise Income Tax Law of the People's Republic of China is a law enacted to enable enterprises and other income-earning organizations in China to pay enterprise income tax. It was adopted by the Fifth Session of the Tenth National People's Congress of the People's Republic of China on March 16, 2007. The Decision on Amendment was amended at the 26th meeting of the Standing Committee of the Twelfth National People's Congress on February 24, 2017.

⁴⁵ Mergers and acquisitions (abbreviated M&A)

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restrict “two high and one capital”⁴⁶ and low-level, excess capacity expansion projects.

From a regional perspective, the *Catalogue of Advantageous Industries for Foreign Investment in Midwest China*⁴⁷ has been revised to increase the entry of labor-intensive projects and encourage foreign businesspeople to develop labor-intensive industries in Midwest China that meet the requirements of environmental protection. The government continued to implement preferential policies on enterprise income tax for qualified domestic and foreign-funded enterprises in the central and Western regions, to maintain a good momentum of development in attracting foreign investment in the central and Western regions. For the transfer of foreign-invested enterprises from the eastern region to the central and Western regions, the government provided supporting policies and special funds, improved administrative services and facilitated the handling of industrial and commercial, tax, foreign exchange, social insurance, and other formalities. Encourage and guide foreign banks to set up institutions and start businesses in the central and Western regions.

Henan province further expanded ways to attract investment. In 2004, Henan launched intermediary, online, academic ways, and assembled teams to go abroad to call in foreign investment (Henan Provincial Government 2004). In that year, the actual utilization of investment amounted to USD 873.67 million. Actual utilization increased by 56% compared with 2003 (Henan Provincial Statistical Bureau 2016). There is worth noting a point time that is in 2008, FDI inflow continued to grow, but the growth rate slowed significantly during this year (See Figure 3-2) (See Table 3-4). The inflow of FDI due to the 2008 financial crisis had been greatly affected, and the growth rate decreased. (Huang 2012)

⁴⁶ In 2005, the Outline of the Eleventh Five-Year Plan for the National Economic and Social Development of the People's Republic of China clearly stated: "Control the export of high energy consumption, high pollution and resources products..." Promote the upgrading of domestic industries. In the fields of industrial economy and commodity trade, we began to call "high energy consumption, high pollution and resources" as "two high and one capital", and the industries with these three characteristics as "two high and one capital" industries. The products with these three characteristics in the production process are called "two high and one capital" products. China has a clear regulation on the "two high and one capital" industry, which restricts or prohibits access to high-pollution, high energy consumption and resource-consuming foreign investment projects. For those that can alleviate the development of "two high and one capital" in China, such as the development of circular economy, renewable energy and ecological environmental protection, it is clearly encouraged.

⁴⁷ Catalogue of Foreign Investment Advantaged Industries in Midwest China (Revised in 2008) issued by the National Development and Reform Commission and the Ministry of Commerce on December 23, 2008 (Decree No. 4 of 2008 of the National Development and Reform Commission and the Ministry of Commerce)

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Table 3-4 The actual utilization of FDI in Henan province from 2002-2009

Unit of value: USD10000

Year	New Agreement Signed		Actually Used Investment
	Number of projects(unit)	Value	
2002	290	101964	45165
2003	324	182560	56149
2004	478	205383	87367
2005	472	235176	122960
2006	497	336788	184526
2007	516	483538	306162
2008	364	604146	403266
2009	274	492055	479858

Source: Henan statistical yearbook, 2016

The sixth stage: the rapid growth stage (2) (2010-2015)

For a long time, China's opening-up has focused on the southeast coast. Guangdong, Fujian, Jiangsu, Zhejiang, Shanghai, and other provinces and cities have become the “leader” and the first beneficiaries, while the vast central and western regions have always played the role of “followers,” which to a certain extent caused regional imbalances in the east, central and Western regions. The “one belt and one way,”⁴⁸ especially the “belt,” started in the west, and mainly through the west to western Asia and Europe. It will make a considerable adjustment in the geographical pattern of China's opening up, and the central and western regions as the new stakeholders will undertake the vital task of developing and revitalizing the vast 2/3 of the territory. At the same time, the eastern region is further improving the level of opening-up through the construction of a series of “free trade zones,”⁴⁹ which is still an essential engine of China's overall opening-up.

In 2015, the actual utilization amounted to USD 16.86 billion, about 39 times than that of 2002(Henan Provincial Statistical Bureau 2016) (See Table 3-5). The most prominent feature in this stage is that FDI is proliferating.

⁴⁸ "One belt and one road" refers to the abbreviation of the "Silk Road Economic Belt" and the "maritime Silk Road twenty-first Century". In September 2013 and October, Chinese President Xi Jinping put forward the cooperation proposal for building the new Silk Road Economic Belt and the twenty-first Century Maritime Silk Road. On March 28, 2015, the State Development and Reform Commission, the Ministry of Foreign Affairs and the Ministry of Commerce jointly issued the Vision and Action for Promoting the Construction of the Silk Road Economic Belt and the Marine Silk Road in the 21st Century.

⁴⁹ China's free trade area refers to a multi-functional economic zone established at home and abroad, with preferential taxation and special customs regulatory policies as the main means and trade liberalization and facilitation as the main purpose.

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Table 3-5 The actual utilization of FDI in Henan province from 2010-2015

Unit of value: USD10000

Year	New Agreement Signed		Actually Used Investment
	Number of projects(unit)	Value	
2010	362	578385	624670
2011	355	767752	1008209
2012	363	1172936	1211777
2013	344	1154233	1345659
2014	328	1183590	1492688
2015	272	737323	1608637

Source: Henan statistical yearbook, 2016

3.2 Distribution of inward FDI's industrial sector

Since 2003, the actual use of foreign capital in Henan Province has not only increased in scale but also expanded from the primary and secondary industries to the tertiary industry. The scale of FDI in the tertiary industry has increased significantly. FDI inflow in the three industries has continued to grow. However, the utilization level of FDI in the primary industry and the tertiary industry is relatively low. The utilization of FDI in the primary industry is less than 4% of the total amount of the province except in 2011, which does not match Henan's status as a major agricultural province in China (See Table 3-6). The actual use of FDI in Henan Province is mainly concentrated in the secondary industry, namely manufacturing, processing, and labor-intensive projects (See Figure 3-4). Henan province has abundant human resources, indicating that labor costs are an important factor in attracting FDI (Wang 2011). With the expansion of the world's top 500 multinational retail companies such as Carrefour, Metro, and Wal-Mart in Henan, the actual utilization level of the tertiary industry has also developed rapidly. The foreign capital in the tertiary industry is mainly concentrated in real estate, wholesale and retail, transportation, and other industries, and they developed rapidly after 2010 (See Figure 3-3). FDI in Henan Province is generally concentrated in the secondary industry and the tertiary industry, and the utilization level of the primary industry is relatively low in recent years. (See Figure 3-4, Table 3-7).

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Table 3-6 Industrial distribution of FDI in Henan province (1)

Unit of value: USD10000

Year	Primary Industry	Secondary Industry	Tertiary Industry	Percentage of Primary Industry	Percentage of Secondary Industry	Percentage of Tertiary Industry
1993	303	7200	3719	2.70%	64.16%	33.14%
1994	266	29897	17514	0.56%	62.71%	36.73%
1995	258	31669	10561	0.61%	74.54%	24.86%
1996	492	39765	7724	1.03%	82.88%	16.10%
1997	-	-	-	-	-	-
1998	343	46290	14959	0.56%	75.16%	24.29%
1999	1036	38529	9962	2.09%	77.79%	20.11%
2000	568	49045	4386	1.05%	90.83%	8.12%
2001	626	29991	5244	1.75%	83.63%	14.62%
2002	677	37636	6354	1.52%	84.26%	14.23%
2003	1994	44969	7233	3.68%	82.97%	13.35%
2004	3175	64647	19418	3.64%	74.10%	22.26%
2005	2190	91602	29168	1.78%	74.50%	23.72%
2006	568	136631	44271	0.31%	75.29%	24.40%
2007	5637	220267	79159	1.85%	72.20%	25.95%
2008	2654	295790	104439	0.66%	73.42%	25.92%
2009	16935	327363	131153	3.56%	68.85%	27.58%
2010	24261	452222	143081	3.92%	72.99%	23.09%
2011	47254	712450	248175	4.69%	70.69%	24.62%
2012	41573	847606	322598	3.43%	69.95%	26.62%
2013	44277	962249	339133	3.29%	71.51%	25.20%
2014	49428	1159147	284113	3.31%	77.66%	19.03%
2015	51202	1246914	310521	3.18%	77.51%	19.30%

Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by author. Note: The data of FDI industry is not recorded in 1997

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Table 3-7 Industrial distributions of FDI in Henan Province (2)

	Unit of value: USD10000									
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Primary Industry	303	266	258	492	-	343	1036	568	626	677
Agriculture, forestry, animal husbandry and fishery	303	266	258	492	-	343	1036	568	626	677
Secondary Industry	7200	29897	31669	39765	-	46290	38529	49045	29991	37636
Industry	7106	28466	29934	29112	-	46264	37726	48446	29421	36856
Mining	-	-	-	-	-	-	-	-	-	-
Manufacturing	-	-	-	-	-	-	-	-	-	-
Production and supply of electricity, gas and water	-	-	-	-	-	-	-	-	-	-
Construction	94	1431	1735	10653	-	26	803	599	570	780
Tertiary Industry	3101	16244	9626	6463	-	13598	8849	2394	4766	6354
Transportation, warehousing, post and telecommunications	191	1571	337	257	-	1043	3		470	252
Information, transmission, computer services and software industry	-	-	-	-	-	-	-	-	-	-
Wholesale and retail trade, catering industry	553	439	295	1857	-	101	337	1027	465	525
Accommodation	-	-	-	-	-	-	-	-	-	-
Finance	-	-	-	-	-	-	-	-	-	-
Real estate industry, public utilities and service industry	2357	14234	8994	4349	-	12454	8509	1367	3831	5577
Leasing and business service	-	-	-	-	-	-	-	-	-	-
Scientific research, technical services and geological exploration industry	-	-	-	-	-	-	-	-	-	-
Management of water conservancy, environment and public facilities	-	-	-	-	-	-	-	-	-	-
Residential services and other services	-	-	-	-	-	-	-	-	-	-
Education	-	-	-	-	-	-	-	-	-	-
Social security, health and social welfare	-	-	-	-	-	-	-	-	-	-
Culture, sports and entertainment	-	-	-	-	-	-	-	-	-	-

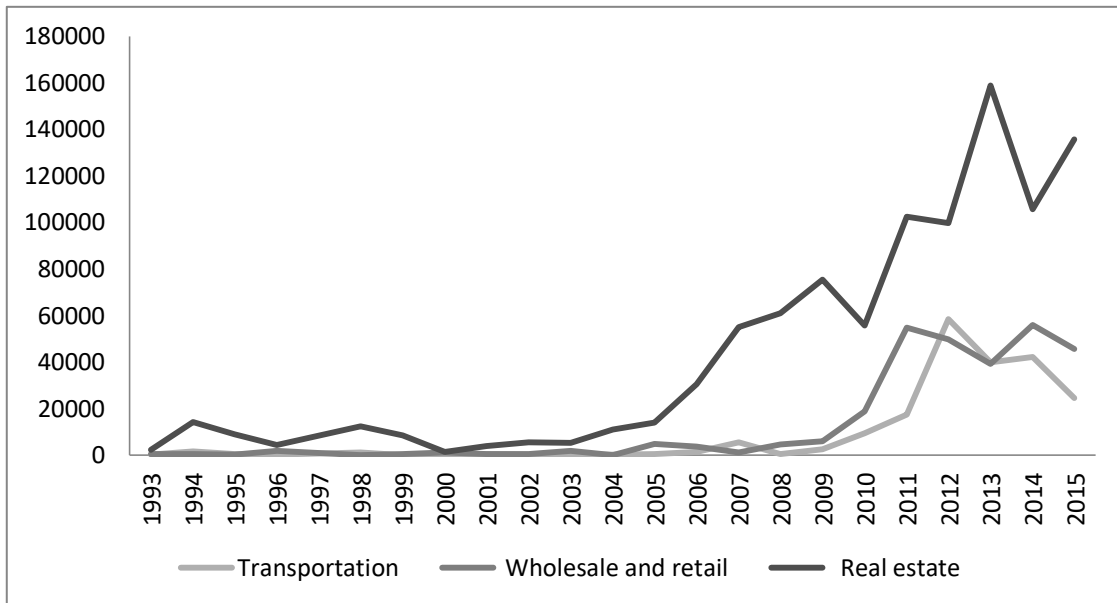
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2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
1994	3175	2190	568	5637	2654	16935	24261	47254	41573	44277	49428	51202
1994	3175	2190	568	5637	2654	16935	24261	47254	41573	44277	49428	51202
44969	64647	91602	136631	220267	295790	327363	452222	712450	847606	962249	1159147	1246914
44713	-	-	-	-	-	-	-	-	-	-	-	-
-	956	11798	6493	43357	62307	9252	15636	37434	22707	32257	25969	47655
-	44523	59972	97522	142235	183958	245443	328039	604452	673425	826200	1021058	1047905
-	16728	19512	32104	33490	33446	58836	104317	53061	76218	93833	104299	140500
256	2440	320	512	1185	16079	13832	4230	17503	75256	9959	7821	10854
7233	19418	29168	44271	79159	104439	131153	143081	248175	322598	339133	284113	310521
128	311	419	1328	5607	530	2535	9355	17330	58535	39792	42160	24431
-	41	170	9	7	65	1406	2811	6235	7852	7040	11293	1482
1857	69	4692	3692	1052	4624	5839	18729	54887	49750	39187	56035	45637
-	2593	1951	932	4171	2004	8767	4741	4973	11814	666	2810	5775
-	-	-	-	-	-	-	-	-	8727	7122	5918	37178
5248	11098	14024	30590	55089	60949	75544	55763	102534	99831	158944	105787	135766
-	2849	744	6511	2455	13173	16596	21625	35403	41649	42473	37683	18164
-		14	5	1414	3290	5072	17005	10559	23588	29959	10093	7872
-	390	1190	926	9354	18767	13733	13030	9743	10349	10637	8528	21821
-	595	552	278	10	1037	1661	22	3811	4002	11	-	-
-	264	5197	-	-	-	-	-	-	-	2137	8	523
-	1123	-	-	-	-	-	-	700	1150	1160	-	1021
-	85	215	-	-	-	-	-	2000	5351	5	3798	10851

Source: Henan statistical yearbook from 1994 to 2016.

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Figure 3-3 FDI in Transportation, Real Estate and Wholesale and Retailing in the Tertiary Industry from 1993 To 2015
Unit of value: USD10000

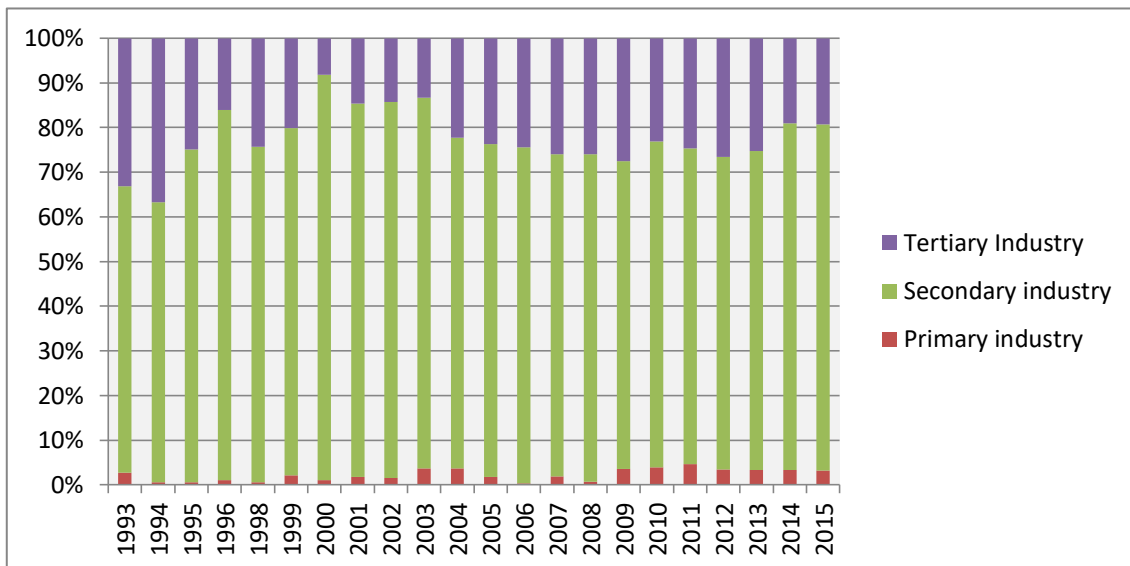


Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by the author.

Note: 1. The official statistics of the FDI industry began in 1993

2. The data on FDI industry are not recorded in 1997.

Figure 3-4 Percentage of industrial distribution in Henan from 1993-2015



Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by the author.

Note: 1. The official statistics of the FDI industry began in 1993

2. The data on FDI industry are not recorded in 1997.

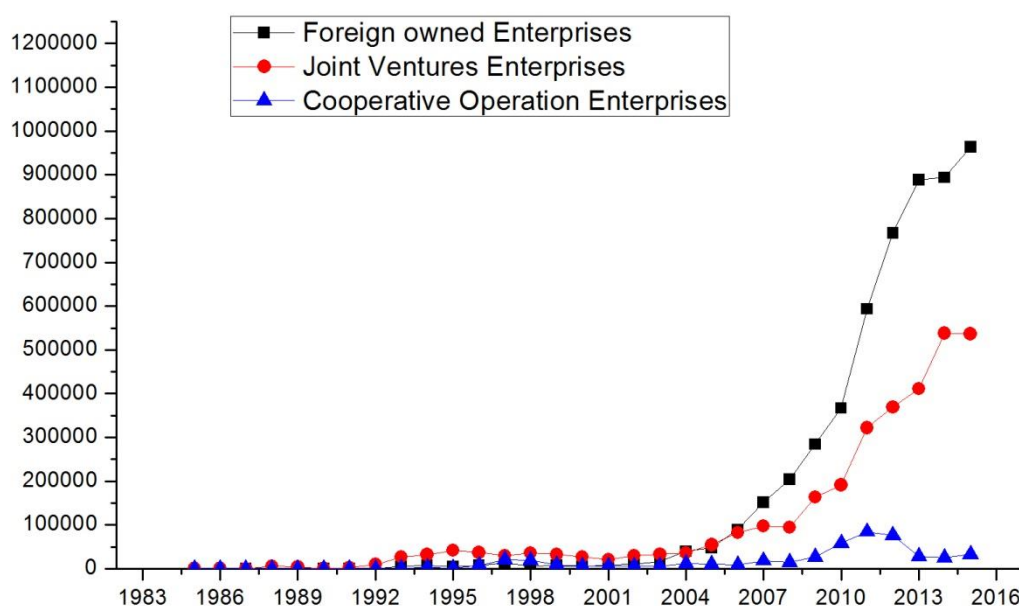
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3.3 Modes of inward FDI

There are three ways of FDI entry in Henan Province: Sino-foreign joint ventures, wholly foreign-owned enterprises, and Sino-foreign cooperative. The flow of FDI by the modes of Sino-foreign joint ventures and wholly foreign-owned in Henan Province has increased gradually, mainly wholly foreign-owned. Before 2004, the mode of FDI was mainly the Sino-foreign cooperative and Sino-foreign joint ventures, and then it became wholly foreign-owned after 2004 (See Figure 3-5).

Figure 3-5 The mode of FDI in Henan from 1984-2015

Unit of value: USD10000



Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by the author.

Note: The data of FDI industry is not recorded in 1997

In 1985, the inflow of FDI by the modes of Sino-foreign cooperative and Sino-foreign joint ventures was USD 5.41 million, accounting for 95.75% of the total FDI in that year (Henan Provincial Statistical Bureau 2017). In 2004, the amount was USD 360.71 million, accounting for 41.29%, and for the first time less than the mode of wholly foreign-owned (Henan Provincial Statistical Bureau 2005). After 2005, FDI flow absorbed by the mode of joint ventures continued to

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grow. However, FDI flow absorbed by the mode of the Sino-foreign joint venture is still lower than the amount of the mode of wholly foreign-owned (See Figure3-5).

Moreover, in 1987, the mode of wholly foreign-owned was used for the first time(Henan Provincial Statistical Bureau 1988). FDI flow by the mode of wholly foreign-owned was USD 310,000 and accounted for only 0.86% of the total amount of FDI utilized in that year(Henan Provincial Statistical Bureau 1988). In 2015, FDI flow absorbed by the mode of wholly foreign-owned reached USD 9.63 billion, accounting for 62.8 % of the total FDI, which was more than the total FDI inflow by the other two modes and occupied the dominant position (Henan Provincial Statistical Bureau 2011).

There are several reasons for foreign companies to adopt different entry modes from 1985 to 2015: (1)When a multinational company invests directly in a specific region, it usually uses Sino-foreign joint ventures to understand the host country market and reduce risk of uncertainty investment. When multinational companies are familiar with the situation, in order to expand profits, most investors began to adopt the mode of wholly foreign-owned mode; (2)Before 2001, when China did not join the WTO, Henan provincial government restricted many multinational companies to operate wholly foreign-owned enterprises for various considerations. For example, the government hoped to learn more technology and management experience. However, with the continuous commitment of China's accession to the WTO and the need for further reform and opening up in Henan Province, the Henan Provincial Government began to encourage and support the wholly foreign-owned mode (Xiaorong Chen 2007). Also, as can be seen from Figure 3-5, Sino-foreign cooperative enterprises are the primary mode in the early days, but after 1993, it is far lower than wholly foreign-owned and Sino-foreign joint ventures. Investor in Henan province mainly adopts the mode of wholly foreign-owned enterprises, followed by Sino-foreign joint ventures and then the Sino-foreign cooperative is the least adopted.

3.4 The source of inward FDI⁵⁰

By the end of 2015, Henan cities had formed brother-city relations with 46 cities, including the United States, France, Japan, Canada, Russia, South Korea, and Italy. With the improvement of the investment environment in Henan Province, more and more investors came to Henan. Since the

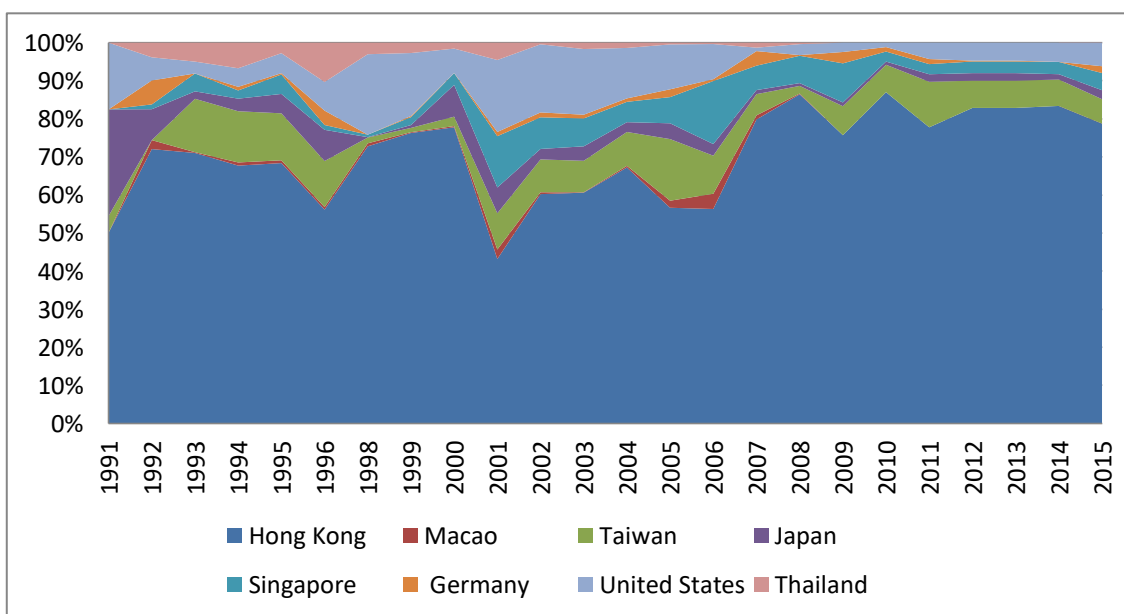
⁵⁰ The source of the foreign investment refers to other countries or regions (including Hong Kong, Taiwan and Macau)

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1980s, investors have mainly come from Hong Kong, Macau, and Taiwan. Investment from Hong Kong accounts for a large proportion (See Figure 3-6).

Since 2009, Macau decreased investing in Henan. Developed countries such as the United States, Japan, Germany, and Singapore have been investing in Henan, but the scale of investment is not as large as Hong Kong (See Figure 3-6). Investors from Hong Kong, Taiwan, and Macau with Chinese cultural background have a natural connection in terms of blood, language, and culture. Also, historical economic relations are very close, which leads to more investment. By 2015, the total FDI inflow in Henan reached USD16.09 billion. Investment from Hong Kong reached USD10.15 billion, accounting for 63.1% of the total FDI inflow. The relatively concentrated origin of FDI in Henan may bring some problems to the stability of attracting investment in Henan Province.

Figure 3-6 The source of FDI in Henan from 1991 to 2015



Source: Henan statistical yearbook from 1994 to 2016. Sorting out and calculating by the author.

Note: The data of FDI industry is not recorded in 1997

3.5 Regional distribution of FDI

There are 18 prefectural-city level administrative divisions in Henan Province and 105 administrative divisions at the county level. The FDI flows of 18 cities in Henan Province from 1993 to 2001, 2008, and 2015 were calculated proportionally, which can be used to visually see the dynamic changes of FDI in time and space. (See Figure 3-7). From 1993 to 2001, although the flow of FDI was relatively small, investment was concentrated in Zhengzhou. By 2008, FDI spread

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throughout Zhengzhou region. By 2015, a large urban agglomeration centered on Zhengzhou, Jiaozuo, Luohe, Luoyang, Jiyuan, Xinxiang and Sanmenxia has been formed.

According to the measures of economy, society and natural resources, taking into account regional division, geographical division, historical inheritance, similar economic development model, productivity distribution, social division of labor and other factors, Henan can be divided into three economic zones: the central city belt economic zone, the north economic zone and southern economic zone (See Figure 3-8)⁵¹. It coincides with the distribution of changes in FDI. Zhengzhou, Luoyang, Pingdingshan, Xinxiang, Jiaozuo, Xuchang, Luohe, Sanmenxia, Hebi, and Jiyuan constitute the economic zone of the central city belt. Anyang and Puyang are located in the northern economic zone. Nanyang, Shangqiu, Xinyang, Zhoukou, Kaifeng, and Zhumadian belong to the southern zones. The cities with the most massive FDI flows in Henan Province are concentrated in the central city belt. There are significant differences in attracting FDI among these three regions.

⁵¹ This regional division was proposed in Henan Province's plan for building a well-off society in an all-round way. The Outline of Henan Province's Plan for Building a Well-off Society in an All-round Way was deliberated and adopted in principle at the Fifth Plenary Session of the Seventh Session of the Henan Provincial Committee in 2003.

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Figure 3-7 Distribution of FDI flow in Henan Province during 1993-2001, 1993-2008, 1993-2015



Note: The total FDI of different periods is calculated and distributed on the map in proportion by ArcGIS software and made by the author.

Figure 3-8 Three Economic Zones of FDI in Henan Province



Note: Made by the author using the software ArcGIS.

3.6 Regional difference analysis

3.6.1 Indicator selection

There are many statistical methods and metrics for the difference analysis. Most of the existing researches use the boxplot, coefficient of variation, and the Gini coefficient to study the income gap. This thesis attempts to use the above ways and FDI Performance Index to measure the degree of difference in FDI in different regions.

3.6.1.1 Boxplot

Boxplot, also known as Box-whisker Plot, uses the minimum, first quartile, median, third quartile and maximum values of a set of data to reflect the central location and distribution range of data distribution, and can roughly see whether the data is symmetrical. By drawing boxes of multiple groups of data on the same coordinate, the distribution differences of each group of data can be displayed, which provides clues for finding problems.

3.6.1.2 Coefficient of variation

The coefficient of variation indicates the ratio between the standard deviation and the mean

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value of the sample. The equation is specified as follows:

$$CV = SD / \bar{X} \quad (3.1)$$

CV and SD refer to the coefficient of variation and standard deviation. The higher the coefficient of variation means the higher the difference between the FDI in different regions, and the smaller the result will be the opposite. If CV=0, there will be no difference in FDI.

3.6.1.3 Gini coefficient

The Gini coefficient is put forward based on the Lorenz curve, Atkinson (1970) And Sen (1973) expanded and improved this theory. At present, it has been widely used in the literatures about economic development and income inequality. This thesis will use the Gini coefficient to analyze the different degree of FDI. According to the needs of the study, the Gini coefficient is chosen as the following:

$$G = \frac{N}{N+1} - \frac{2}{N^2 \left(\frac{1}{N} \sum_{i=1}^N X_i \right)} \sum_{i=1}^N (N+1-i) X_i \quad (3.2)$$

Where N refers to the number of regions in the whole region; $\frac{1}{N} \sum_{i=1}^N X_i$ refers to the average FDI of the whole region; i (i=1,..., N) refer to the regional unit. 0-1 is the range of the Gini coefficient. When G equals 0, it represents absolute equality, and there is no difference among cities. The greater the G represents the higher the difference of FDI among the regions.

3.6.1.4 Inward FDI Performance Index

Location entropy is a commonly used index in regional economics and economic geography, which is used to measure the importance of a particular industry in a region. Mattila and Thompson (1955) first put forward the calculation method of location quotient. Haggett (1981) developed the theory further and it was developed to measure the performance of FDI. The index, initially used for country-level analysis, was introduced by UNCTAD to evaluate how successful countries are, when considering the size of their economy, in attracting FDI. The performance index of FDI reflects the relative success of a country in attracting FDI (Salike 2016). The equation is specified as follows:

$$Q_i = \left(X_i / \sum_{i=1}^N X_i \right) / \left(GDP_i / \sum_{i=1}^N GDP_i \right) \quad (3.3)$$

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Where

Q_i = The i th region location entropy;

X_i = The FDI flow used in i th region;

$\sum_{i=1}^N X_i$ = FDI flow in the whole region;

GDP_i = Gross regional product of i th region of Henan Province;

$\sum_{i=1}^N GDP_i$ = GDP of Henan Province.

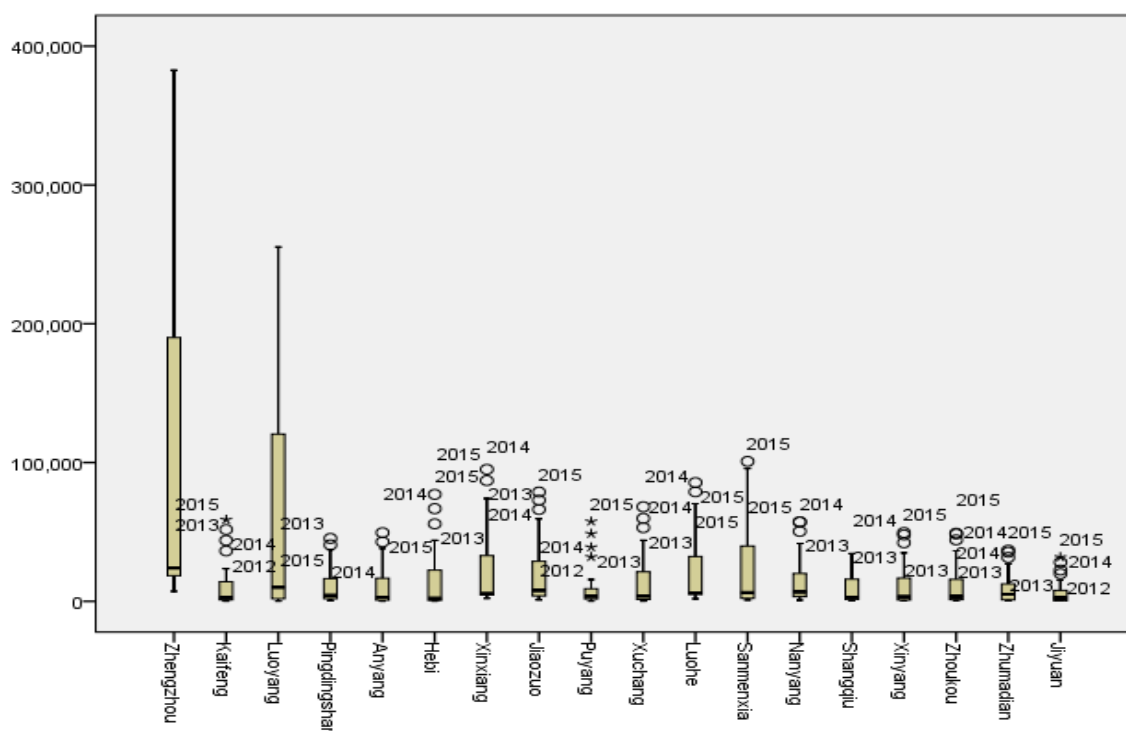
3.6.2 Analysis result

3.6.2.1 Boxplot analysis

The median of the data reflects the average trend of the sample data. As can be seen from Figure 3-9, the median line of the central city belt represented by Zhengzhou, Luoyang and Jiao is higher than that of other regions, which means that the FDI inflow of the central city belt is also higher than that of other regions. The upper and lower limits of the box are the upper quartile and the lower quartile of the data. It means that the box contains 50% of the data. Therefore, the height of the box reflects the degree of fluctuation of the data to some extent. The box is short, indicating that the data is concentrated, and the box is long, indicating that the data is discrete. It can be seen from Figure 3-9 that the FDI inflow of central city belts such as Zhengzhou, Luoyang, Sanmenxia, Xinxiang, and Jiaozuo are significantly discrete, indicating that between 1993 and 2015, these regions have experienced significant changes in FDI absorption. The boxes of other cities are relatively short, which means that the data of these areas are relatively concentrated between 1993 and 2015, and the change is smaller than that of the cities in the central city belt. From the box plot, the strength of the data distribution skewness can be judged according to the position analysis of the median line. The more the median deviates from the center position of the upper and lower quartiles, the stronger the distribution skewness is. As can be seen from the figure3-9, the median line of all cities is below, and besides Zhengzhou and Luoyang, all other cities have abnormal values since 2013, which means that FDI inflows in these regions have only started to develop rapidly in recent years.

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Figure 3-9 Boxplot analysis of FDI inflow in different cities of Henan province during the period of 1993-2015



3.6.2.2 Analysis based on the coefficient of variation

During 1994-2015, the coefficient of variation among different regions of Henan province did not fluctuate widely, basically in a relatively stable state. It has been maintained by a high level since 1994 and fluctuated around the 1.23 average lines (See Figure3-10). The coefficient reached the highest point in 1999 and 2008(See Table3-8). It began to decline from 2009 and decreased slightly, which indicates that although there was a little change of FDI in Henan province. The coefficient of variation is still maintained at a higher position. It can be said that regional differences between FDI had not been significantly improved.

Table 3-8 Coefficient of variation of FDI among different cities in Henan Province

Index:	Coefficient of variation									
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Estimate	1.30	1.38	1.34	1.59	1.58	1.67	1.10	0.92	0.77	1.06
Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	1.05	1.02	1.29	1.42	1.53	1.42	1.30	1.27	1.15	1.01
Year	2014	2015								
Estimate	0.99	0.96								

Note: Calculated by the author

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3.6.2.3 Analysis based on Gini coefficients

According to the United Nations organizations on the division of the standard section of the Gini coefficient, the Gini coefficient can be divided into four categories: if $G < 0.3$, the difference is not apparent; if $0.3 < G < 0.5$, the difference is reasonable; if $0.5 < G < 0.8$, the difference is enormous and if $G > 0.8$, the difference has reached a severe level.

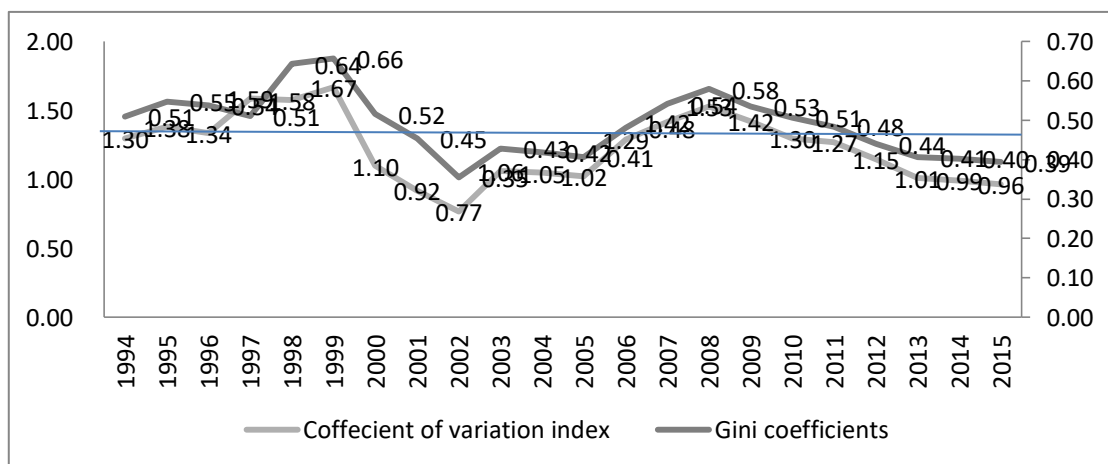
Table 3-9 Gini coefficient of FDI in Henan

Index:	Gini coefficients									
Year	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Estimate	0.51	0.55	0.54	0.51	0.64	0.66	0.52	0.45	0.35	0.43
Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Estimate	0.42	0.41	0.48	0.54	0.58	0.53	0.51	0.48	0.44	0.41
Year	2014	2015								
Estimate	0.40	0.39								

Note: Calculated by the author

From 1994 to 2000, the Gini coefficient of FDI was in the range of 0.5-0.8, which indicates that the differences of FDI among cities in Henan Province are significant. The coefficient of Gini was at the level of 0.3-0.5 during 2001-2006, and then reached the highest level of 0.59 in 2008. From 2009, the coefficient decreases gradually (See Figure 3-10, Table3-9). All this indicates that regional differences are shrinking. Although the coefficient of some years is in a reasonable range, the cumulative difference is still relatively high. The trend lines of the coefficient of variation and Gini's coefficient are basically in the same.

Figure 3-10 coefficient of variation and Gini coefficient



3.6.2.4 Analysis based on Inward FDI Performance




Inward FDI Performance Index reflects the regional comparative advantage of FDI. If FDI matches its relative share in GDP, then the performance index is equal to 1. The index is greater than 1; it indicates that the FDI in this region is larger than the expected value of FDI according to its GDP scale. That is, the regions attract more FDI than its GDP scale. If the calculated index is less than 1, it indicates that the FDI in this region is less than the expected value of FDI according to its GDP scale. It may be due to weak investment environment, small-market size or policy restrictions (Liu 2006)

Table 3-10 shows the Inward FDI Performance Index among cities in Henan Province during the past 1994-2015 years. Obviously, for many years, central city belt economic zone, led by Zhengzhou and Luoyang, is the most attractive for foreign investors, with an index of much higher than 1. Among them, Luohe always maintains the dominant position. In 2000, the index was 5.02, even in the lowest year, reaching 1.17 in 1997. The indices of Xinxiang, Jiaozuo, and Jiyuan, are always fluctuating, indicating that FDI performance in these areas is unstable. For example, in Jiyuan, the index reached 3.34 in 1997 and fell to 0.42 in 1999. The foreign investment performance index of Pingdingshan, Xuchang, and the other cities in the northern and southern are less than 1. These cities are in the backward position. However, in the northern economic zone, the southern economic zone, the performance index of FDI had increased in recent years.

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Table 3-10 Inward FDI Performance Index in Henan Province

Year	Zhengzhou	Luohu	Sanmenxia	Xinxiang	Jiaozuo	Hebi	Jiyuan	Luoyang	Anyang	Puyang	Kaifeng	Pingdingshan	Xuchang	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian
1994	2.07	2.62	0.48	1.50	0.87	0.88	0.00	2.01	0.28	0.46	1.19	0.53	0.21	0.51	0.98	0.33	0.16	0.96
1995	2.44	1.37	0.76	1.50	0.57	0.78	0.49	1.89	0.52	0.52	1.47	0.49	0.38	0.54	1.02	0.54	0.16	0.10
1996	2.61	2.98	0.99	1.26	0.76	0.63	0.51	1.27	0.68	0.69	0.96	0.54	0.48	0.48	0.75	0.20	0.18	0.17
1997	2.52	1.17	2.20	0.57	0.84	0.86	3.34	0.93	0.04	0.69	0.15	0.63	0.53	0.84	0.52	0.21	0.57	1.44
1998	2.77	2.88	1.22	1.19	1.74	0.35	0.52	0.36	0.06	0.09	0.13	0.22	0.13	1.05	0.44	0.16	0.32	1.57
1999	2.93	3.95		1.69	2.45	0.52	0.42	0.05	0.27	1.03	0.07	1.18	0.35	0.28	0.28	0.11	0.33	0.20
2000	1.67	5.02	1.15	2.21	0.62	0.33	1.02	0.37	0.09	1.21	0.64	2.09	0.82	0.20	0.33	0.49	0.32	0.74
2001	1.34	3.92	1.68	2.15	2.64	1.34	2.70	0.28	0.68	0.33	0.79	0.58	1.51	0.23	0.54	0.56	0.27	0.13
2002	1.36	2.47	1.55	1.51	1.87	1.69	2.34	0.48	0.38	2.01	0.54	0.79	0.79	0.73	0.72	0.69	0.40	0.33
2003	1.79	2.96	2.42	1.50	1.07	1.28	2.33	0.18	1.07	0.98	0.65	0.91	0.23	0.60	0.48	0.63	0.62	0.39
2004	1.79	2.51	2.20	1.00	1.39	0.93	1.60	1.00	0.41	0.92	0.55	0.75	0.64	0.43	0.50	0.78	0.48	0.59
2005	1.74	2.05	1.85	0.95	1.38	1.40	1.42	0.89	0.44	0.83	0.49	0.67	0.61	0.39	1.42	0.57	0.66	0.54
2006	2.07	1.70	2.28	1.06	1.18	1.22	1.05	1.08	0.50	0.69	0.45	0.58	0.62	0.38	0.32	0.53	0.60	0.52
2007	1.98	1.92	1.77	0.79	0.91	0.99	0.89	1.96	0.45	0.56	0.46	0.54	0.51	0.30	0.29	0.42	0.45	0.42
2008	2.11	1.97	1.62	1.09	0.25	1.40	0.82	2.12	0.44	0.08	0.43	0.53	0.50	0.32	0.35	0.41	0.49	0.40
2009	2.02	1.74	1.53	1.06	0.75	1.70	0.90	1.89	0.42	0.45	0.40	0.50	0.67	0.31	0.29	0.43	0.45	0.39
2010	1.75	1.77	1.70	1.03	0.86	1.95	0.85	1.93	0.42	0.43	0.52	0.47	0.60	0.38	0.34	0.57	0.48	0.44
2011	1.68	1.54	1.65	0.96	0.91	1.94	1.11	1.77	0.47	0.47	0.59	0.56	0.61	0.42	0.35	0.62	0.56	0.48
2012	1.51	1.91	1.62	0.96	0.94	1.97	1.11	1.64	0.49	0.79	0.74	0.61	0.63	0.44	0.43	0.61	0.57	0.48
2013	1.30	1.98	1.74	1.01	0.94	2.17	1.18	1.71	0.55	0.83	0.78	0.70	0.68	0.49	0.43	0.65	0.60	0.50
2014	1.26	1.98	1.82	1.07	0.93	2.31	1.38	1.73	0.56	0.92	0.82	0.53	0.68	0.51	0.43	0.64	0.58	0.49
2015	1.21	2.00	1.87	1.11	0.95	2.49	1.50	1.70	0.61	1.00	0.85	0.56	0.73	0.46	0.44	0.61	0.54	0.47

	Central Plains Urban Agglomeration Economic Zone
	Northern Economic Zone
	Southern Economic Zone

Note: Made by the author. The index over 1 is marked with shadows.

3.7 Summary

The thesis has compiled and analyzed data to reflect the status of FDI in Henan Province and discussed the characteristics of different stages of FDI development in Henan Province, the industrial distribution, the entry mode of FDI, the distribution of source countries and location distribution.

After the reform and opening up policy, FDI inflow in Henan has been developing rapidly because of the change of political and economic environment. However, there are a few twists and turns in the process. FDI in Henan has been developing slowly for quite a long time. Several economic crises also affect it. The Asian economic crisis in 1997 resulted in a reduction in FDI in the next few years. China's accession to the WTO in 2001 led to a significant increase. However, due to the impact of the global financial crisis in 2008, growth rates began to slow. With the stimulation of a series of government policies, FDI has developed rapidly.

FDI inflow in the primary industry is relatively small, and the ability of the primary industry to absorb FDI inflow is not in line with Henan's status as China's vital agricultural province. In terms of major operation mode, foreign investors in Henan Province mainly adopt both wholly foreign-owned and Sino-foreign joint ventures. It is worth noting that after China's accession to the WTO, the wholly foreign-owned mode has become the primary way of using foreign capital in Henan Province. Henan's FDI generally comes from three regions: Hong Kong, Macau, and Taiwan. Compared with these three regions, there are fewer investments from developed countries and other regions. The distribution of FDI in cities in Henan Province is extremely uneven, with Luoyang and Zhengzhou accounting for most of FDI inflow. This imbalance has also led to uncoordinated economic development in Henan.

This thesis also uses the boxplot, Gini coefficient, coefficient of variation, and FDI performance index to measure the uneven distribution of foreign capital. From 1993 to 2015, the distribution of foreign capital in Henan Province was uneven. Although conditions have improved in recent years, regional differences still exist, which is attributed to the geographical characteristics of the region with local endowment. The central city belt economic zone centered on Zhengzhou has more labor, larger market scale, more convenient transportation, more favorable policy support. Therefore, FDI inflow in these regions is also substantial.

CHAPTER4 THE REGIONAL DETERMINANTS OF FDI IN HENAN PROVINCE FROM THE MACRO PERSPECTIVE

4.1 Introduction

In the past researches, it was generally believed that market factors(Cheng and Kwan 2000; Coughlin and Segev 2000; Wang and Swain 1995) and wage levels(Liu, Song, Wei and Romilly 1997; Wheeler and Mody 1992), labor quality(Broadman and Sun 1997; Cheng and Kwan 2000; Coughlin and Segev 2000), aggregation(Braunerhjelm and Svensson 1996; Coughlin, Terza and Arromdee 1991; Sun, Tong and Yu 2002; Wheeler and Mody 1992), infrastructure(Chen 1996; Cheng and Kwan 2000; Head and Ries 1996; Sun, Tong and Yu 2002), and openness(Lu 1997; Sun, Tong and Yu 2002) are essential considerations for foreign investment. In these studies, the quality of the labor is basically measured by the number of students in higher education (Cheng and Kwan 2000; Lu 1997; Sun, Tong and Yu 2002) and the people engaged in scientific research (Braunerhjelm and Svensson 1996; Chen 1996; Sun, Tong and Yu 2002) that may critically influence the foreign investment. As for the industry, Coughlin, Terza and Arromdee (1991) study the US manufacturing industry and Friedman and Fung (1996) analyzes the US high-tech manufacturing industry as a research object.

The models estimated and applied in this chapter are based on these articles(Na and Lightfoot 2006; Sun, Tong and Yu 2002). Labor quality measured by the different educational levels and industrial structure will be examined, and different education levels of labor and industries may have the corresponding impacts on FDI inflow. The previous articles did not cover these parts. It will be the essential content and the innovation of this thesis. The chapter is structured as follows: the theoretical framework and unique economic background of Henan province, hypothesis formation, research methodology, data analysis, and the results.

4.2 Theoretical Background

4.2.1 Theoretical framework

FDI theory is not based on the strict theoretical framework, so the determinants of FDI theory,

in reality, are not very clear.⁵² The factor of FDI is only studied through several isolated theories, and an integrative perspective has not evolved (Sethi, Judge and Sun 2009). FDI has been discussed through several research streams, but no holistic conceptual framework synthesizes diverse perspectives (Sethi, Judge and Sun 2009). For this reason, empirical analysis using statistical data on direct investment began in the 1970s.⁵³ Based on the previous literature review, this thesis will especially use Dunning's "OLI" eclectic paradigm theory, the comparative advantages of the location to analyze in detail.

In order to empirically explore the decisive factors of FDI in China, we must first understand the causes of FDI in theory. When interpreting FDI, it is from the perspective of the individual or multinational enterprises, why companies choose to invest in foreign destination countries in the form of FDI. The relevant theories include neo-classical theory, internalization theory, product life cycle theory, location theory, and eclectic paradigm theory, etc. The eclectic paradigm theory was proposed by Dunning (1973). Dunning (1973) integrated the theories to propose a compromise theory, arguing that the phenomenon of FDI is due to the combined effects of three advantages, including ownership advantage, location advantage, and internalization advantage (See Figure4-1).

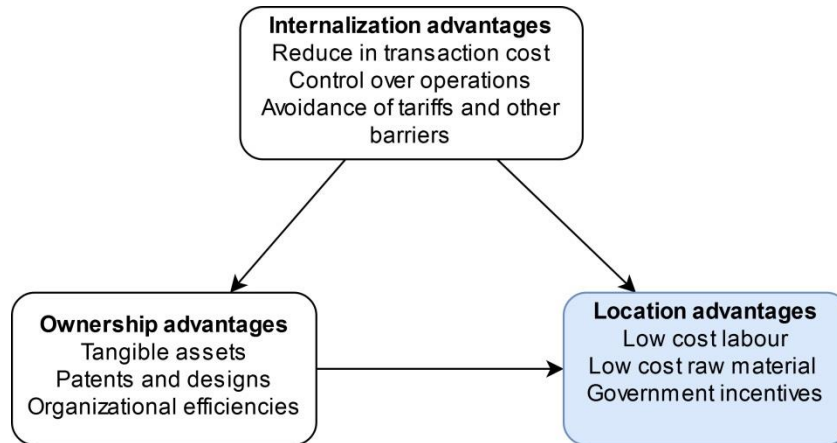
The location advantage argument comes from the location theory. The invested countries have unique location characteristics and are beneficial to the multinational enterprises, such as the production location advantage and market location advantage. Dunning (1973) puts forward the internalization advantage, according to the internalization theory (Buckley and Casson 1976). This advantage refers to the fact that in order to reduce the external transaction cost, the manufacturer has incentives to convert the external market transaction behavior into part of the internal production activities of the enterprise, and internalization the cross-border transaction can gain a competitive advantage. The compromise theory formed by these three advantages is also called the OLI theory (the English abbreviation of the three advantages). Under the combined effect of these three advantages, the manufacturers will conduct cross-border investment, and the phenomenon of FDI will occur. Although many scholars theoretically explained the causes of FDI from different

⁵² Buckley, Peter J, and Mark C Casson, 1998. Analyzing foreign market entry strategies: Extending the internalization approach, *Journal of international business studies* 29, 539-561. Toshiyuki, Matsuura, 2015. *New trend of theoretical and empirical research on foreign direct investment*(Mitsubishi Research Institute). This point is mentioned in both of researches.

⁵³ Buckley, Peter J, and Mark C Casson, 1998. Analyzing foreign market entry strategies: Extending the internalization approach, *Journal of international business studies* 29, 539-561, Chakrabarti, Avik, 2001. The determinants of foreign direct investments: Sensitivity analyses of cross - country regressions, *kyklos* 54, 89-114, Dunning, John H, and Sarianna M Lundan, 2008. *Multinational enterprises and the global economy*(Edward Elgar Publishing). It was mentioned in these articles.

angles, the theoretical basis of the empirical analysis of this study is more inclined to the location advantages theory emphasized by the location theory and the eclectic paradigm theory, in order to clarify the unique regional location characteristics.

Figure 4-1 Eclectic paradigm Economic theory



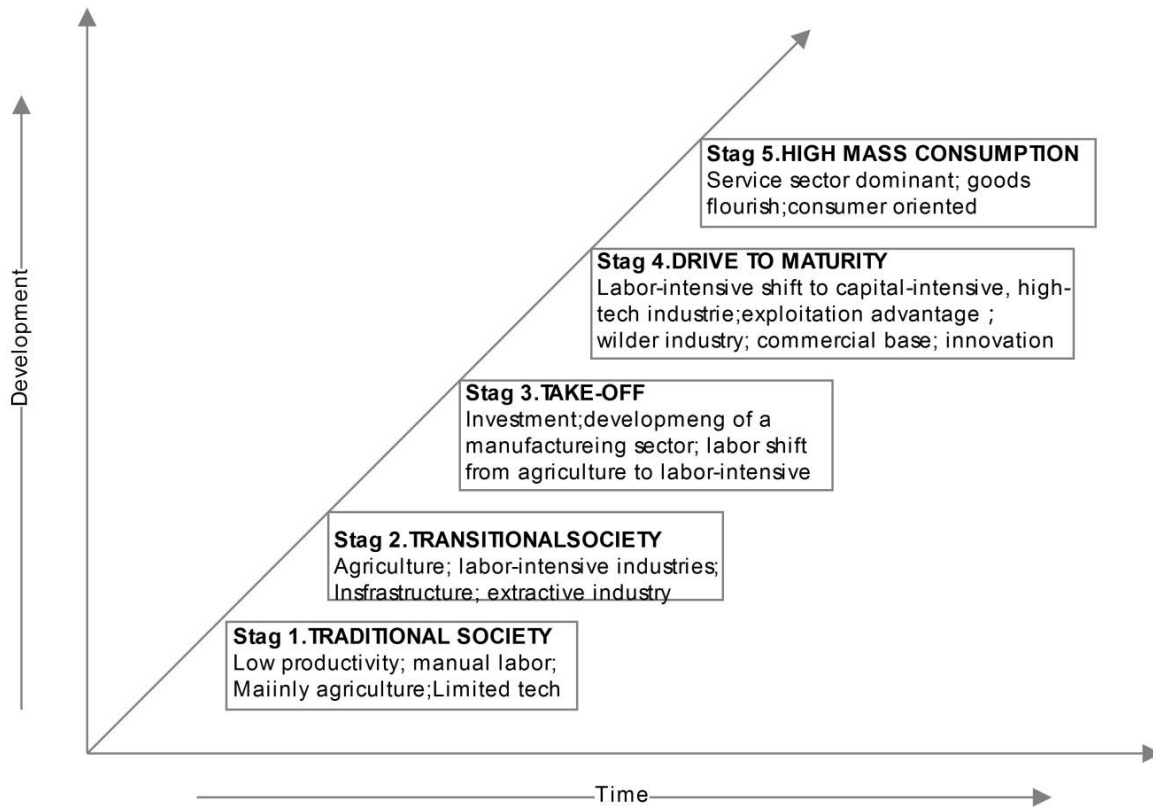
Note: Made by the author according to Dunning (1973)

4.2.2 Rostow's theory of economic growth

Rostow (1960), an American economist, published the monograph “the stages of economic growth” in 1960, put forward the theory of economic growth stage, and decomposed the stage of economic growth into five stages, such as traditional society stage, preconditioned take-off stage (Transitional society), take-off stage, drive to maturity stage and high-mass consumption stage. Leading industries in distinct stages provide the driving force for sustained economic development. The continuous growth of leading industries created new technologies and space to prepare for the next stage, stimulating and attracting the advancement of related industries. The stages of economic development, the process of industrialization are given in Figure 4-2. Traditional societies are characterized by self-sufficient agriculture or hunting and gathering, almost exclusively a “primary” sector economy and limited technology. The leading industries in the transitional society are mainly the primary industry or labor-intensive manufacturing, and the extensive and enhanced investment in physical infrastructure is the primary task of this period. “Secondary” (goods-producing) sector expands, and the ratio of secondary vs. primary sectors in the economy shifts quickly towards secondary (Rostow 1960). In the drive to the mature stage, industries and export products are diversified, and high value-added industries accordingly increase. The focus of investment shifts from labor-intensive to capital-intensive sectors. In the stage of mass consumption, the industry shift from manufacturing to the service sector, and consumers are more willing to spend money on

leisure, education, health care, national security, and social security programs.

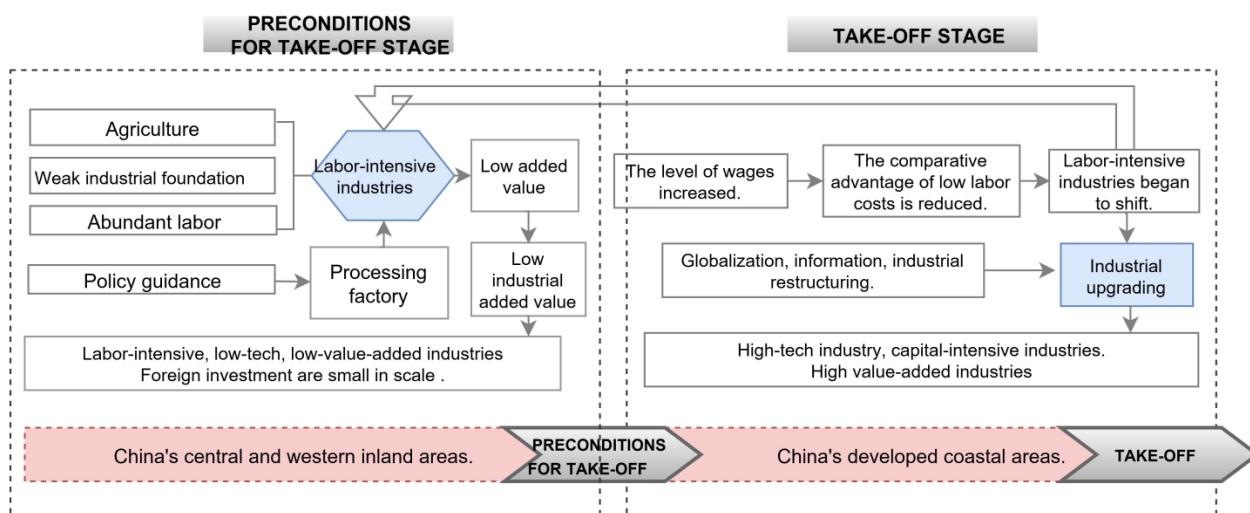
Figure 4-2 Rostow's development model



Note: Made by the author according to Rostow's theory of economic growth stage (Rostow 1960).

Figure 4-3 shows the formation and transfer process of leading industries in various stages of China. Most of China's central and western inland areas are either still in the stage from “transitional society” to “taking off.” These areas are dominated by agriculture, with a weak industrial base, abundant labor force, and under the policy guidance, resulting in the emergence of labor-intensive industries. During the transition society to an advanced stage, science and technology will play a role. With the increase of Labor productivity, labors will shift from agriculture to labor-intensive manufacturing. At the same time, the developed coastal areas gradually enter into the stage of maturity. Under the influence of global globalization, informatization, and the development of high-tech industries, the industry in coastal developed regions started to transfer from low-processing, labor-intensive sectors to capital-intensive and technology-intensive sectors.

Figure 4-3 The formation, development, and transfer of industry in the transition and take off stage



Note: Made by the author according to Rostow's theory of economic growth stage (Rostow 1960).

In light of this situation and the effect by the financial crisis in 2008, the government proceeded to guide the directions of the industry. It advocated the “vacating cage to change birds” policy⁵⁴ in the developed regions and adopted the strategy of “rising strategy of central China”⁵⁵ in the central areas. The enterprises in the coastal regions used to be very active in the eastern coastal areas, realizing the expansion of China's manufacturing in the world. With the labor costs rise and policy squeeze the living space, cost-sensitive and labor-intensive sectors have to run away and turn to central and western inland areas.

Henan Province is located in the central and inland regions in China. It is a mostly agricultural province with abundant labors and cheap labor costs. At 2017, Henan Province's grain output reached 59.73 million tons, ranking second, the population reached 108,528,500 ranking third, the per capita disposable income is CHY 20,170.03, ranking 24th in the whole China and agriculture, labor-intensive industries dominated (Henan Provincial Statistical Bureau 2017). Based on the Rostow's theory, it is in the stage of transition society to the take-off stage and will be an absolute

⁵⁴ “Vacating cage to change birds” was formally proposed by the secretary of Guangdong provincial Party committee Wang Yang in May 29, 2008, with the decision of the Guangdong provincial Party committee and the Guangdong Provincial People's Government on promoting industrial transfer and labor transfer, also known as the “double transfer strategy”. According to the national industrial policy, the government will carry out the policy of differential treatment of industry admittance, raise the standard of land use, energy consumption, water consumption and pollutant emission, improve the entry threshold of labor intensive industries, and actively shift some low value-added labor intensive industries to less developed areas.

⁵⁵ The rise strategy of central China is a central policy to promote the rise of the 6 provinces of China's Central Economic Zone -- Shanxi, Henan, Hubei, Hunan, Anhui and Jiangxi. It was first put forward by Premier Wen Jiabao in March 5, 2004. The plan for the rise of the central region will be implemented in the Eleventh Five Year Plan period. The development of this period is based on existing foundations, upgrading industrial level, promoting industrialization and urbanization

ideal region that attracts the relevant leading industrial transfer and investment that are well-suited to this stage from the developed coastal areas. Therefore, regarding attracting investment in Henan at these stages, the supply of labor, the quality of labor, the cost of labor, and the industrial structure would be the key factors that investors will consider.

4.3 Determinants of FDI and Hypothesis development

According to Dunning's eclectic paradigm theory and research mentioned above, this thesis makes a detailed exposition of the new and traditional regional factors affecting FDI and forms corresponding hypotheses. This thesis combined these factors in particular periods to summarize the determinants that seem to be indispensable to the FDI inflow and based on which the hypothesis of this study are obtained.

4.3.1 Market factor

Wheeler and Mody (1992) analyzed direct investment by the United States to 42 countries from 1982 to 1988 and shows that the expansion of the market size of the investee country promotes FDI in the United States. In the 20th century, Canfei and Jinshe (1999) began to use GDP, per capita GDP to measure the market size. Most scholars have shown that the size of the market and FDI positively related, (Wei and Bingyun 2004), (Cheng and Kwan 2000), (Jin Xiangxi 2006), (Naohiko 2006), (Kang and Lee 2007). Since the 1990s, the market potential has gradually become an important variable affecting foreign investment (Minghong 1999). The faster the economy grows, the more likely it is the fact that it will induce more investment (Houkai 2001; Tingzhan 2013). Thus, the hypothesis on FDI inflow is proposed to have a definite link between market size and market growth potential.

Hypothesis 1: Market factor influences FDI inflow in Henan Province.

4.3.2 Infrastructure

The relationship between the infrastructure and the FDI inflow is positively correlated (Broadman and Sun 1997; Chen 1996). Wheeler and Mody (1992) found that US direct investment in developing countries requires consummate infrastructures. Coughlin, Terza and Arromdee (1991) found that there is a significant positive correlation between FDI and the length of the highway in every square mile, the length of the railway in every square mile and the number of airports in the United States. Houkai (2001) also show that infrastructure is one of the main locational factors of

FDI, which has been validated empirically both in many countries, such as the United States (Shaver, 1998), as well as in developing economies like China (Cassidy and Andreosso-O'Callaghan 2006; Gong 1995; He 2002; He 2006; Head and Ries 1996; Wei, Liu, Parker and Vaidya 1999).

A hypothesis regarding the effect of the infrastructure factor on FDI inflow would be proposed as follows:

Hypothesis 2: Infrastructure factor influences FDI inflow in Henan Province.

4.3.3 Cost factor

Investors who came to China early on value China's low-cost workforce, so some scholars showed that the average wages of workers and the inflow of FDI are generally negatively correlated (Cheng and Kwan 2000; Coughlin and Segev 2000; Wei, Liu, Parker and Vaidya 1999). Jing and Huixin (2007), McKinlay and Little (1978) argues that the primary factor of the location choice of foreign investment is the minimum cost. Wei and Xiaoqin (2009) proposed that China's overall salary level is low in the whole world, so the average wage caused the inflow of FDI in China. While Broadman and Sun (1997), Chen (1996), Head and Ries (1996) believes that the impact of the labor cost on the distribution of FDI is not significant. Kang and Lee (2007) and Du, Lu and Tao (2008) believed that FDI is positively correlated with labor costs. Labor costs are an indirect measurement of labor quality. The higher the cost, the higher the quality of labor will be. High-wage workers often can create more wealth.

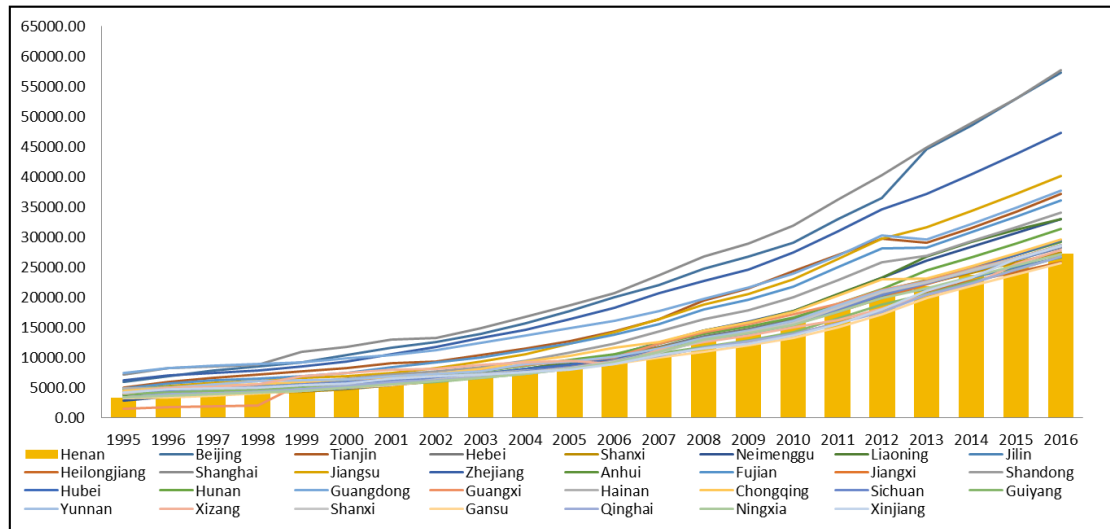
From the previous analysis of China's industrial upgrading and transfer, it can be seen that labor-intensive industries in developed coastal areas are facing the disappearance of comparative cost advantages and have to turn to the inland. Henan Province has a vast territory and a large population. It has the abundant workforce and the very competitive salary (See Figure 4-4). Henan has become an ideal destination for labor-intensive industries. Foreign companies can more easily recruit the cheap workers they need in Henan province. Foxconn's production line was moved to Zhengzhou, Zhoukou, Hebi, and Jiyuan in Henan Province in 2012 because of the shortage of workers.⁵⁶ The labor cost is one of the factors that cannot be ignored in transition society and take

⁵⁶ Hon Hai Precision Industry Co., Ltd., trading as Foxconn Technology Group, is a multinational electronics contract manufacturing company headquartered in Tucheng, New Taipei, Republic of China (Taiwan)(Strikes end at two Chinese automotive suppliers (<https://www.reuters.com/article/us-china-labour/strikes-end-at-two-chinese-automotive-suppliers-idUSTRE66L0A220100722>) Foxconn is the world's largest contract electronics manufacturer and the fourth-largest information technology

off stage. For the leading industries of this period, high-labor-intensive investment projects, the sufficient labor force, and competitive cost are indispensable.

Figure 4-4 The average wage in Henan Province from 1995 to 2016.

Unit: CHY (Yuan)



Note : Made by the author.

Source: Henan Statistical Yearbook, 2017.

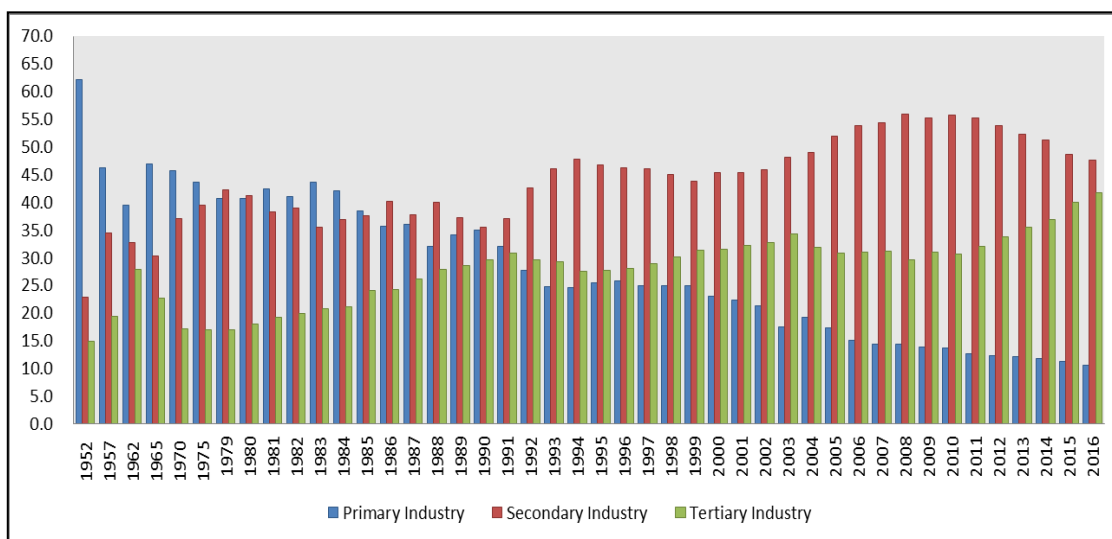
As shown in Figure 4-5, since 1984, the proportion of the secondary industry had exceeded the proportion of the primary industry and has continued to increase, which indicates that Henan Province was entering a transition period from the traditional social stage, during which agriculture and low-tech, labor-intensive industries dominate. With the further development of the manufacturing industry, Henan entered the take-off phase, the proportion of the secondary industry gradually declined, and the proportion of the tertiary industry as the primary indicators for the optimization and upgrading of the industrial structure (Liu, Dang and Wang 2010) has been increasingly rising from 2008. Investors will gradually demand a high quality of labors. Labor cost is an indirect indicator of the quality of workers. Taking into account the cost factors in previous studies and the actual situation in Henan Province, the hypothesis regarding the effect of the cost factor on FDI inflow can be proposed as follows:

Hypothesis 3.1: In the stage of transition society, labor costs have an impact on FDI inflow.

company by revenue. (<https://www.worldatlas.com/articles/which-are-the-world-s-largest-technology-companies.html>) The company is the largest private employer in China and one of the largest employers worldwide. (BARBOZA, DAVID, 2016. "How China Build 'iPhone City' With Billions in Perks for Apple's Partner". *The New York Times*.) It now has more than 1.2 million employees and is a typical labor-intensive industry company.

Hypothesis 3.2: With industrial optimization and upgrading and entering the take-off stage, labor costs as a measure of labor quality began to change and have a different impact on FDI inflow.

Figure 4-5 Industrial Sectors Distribution in Henan province. (From 1952 to 2016, units %)



Note: Made by the author.

Source: Henan Statistical Yearbook 2017. Note: All data during 1952-2016 is too large relative to the page, so data from pre-1979 was set to once every five years. This period was dominated by agriculture.

4.3.4 Agglomeration

Agglomeration refers to the positive externalities (Marshall 1890; Pigou and Todd 1934) formed by the regional concentration of economic activities and related production facilities, as well as the economies of scale and scope (Na and Lightfoot 2006; Smith and Florida 1994). Marshall (1890), Weber (1929) and Hirschman (1958) demonstrated the importance of the agglomeration effect on the economy. The traditional view of the location is based on agglomeration economies that have been broadly applied in economics and economic geography (Krugman 1991; Porter 1998). The presence of agglomeration can enhance the attractiveness of regional foreign capital. Moreover, it is closely related to the quality of infrastructure, professional services, labor market, and industrial clusters.

Various studies have shown the positive correlation between agglomeration, and FDI (Braunerhjelm and Svensson 1996; Coughlin, Terza and Arromdee 1991; He 2002; Sun, Tong and Yu 2002; Wheeler and Mody 1992). The relation between agglomeration and FDI inflow in Henan province is hypothesized as follows:

Hypothesis 4: The agglomeration influences FDI in Henan Province.

4.3.5 Openness

Openness is a dominant driving force in the development of the regional economy. Nguyen⁵⁷ explains that the primary goals of economic liberalization are the free flow of capital between nations and the efficient allocation of resources and competitive advantages. The close relationship between local economic development and the international market, especially the import and export trade and the utilization of foreign capital, is an integral part of the marketization and capital elements. The higher the degree of openness in an area, the more perfect the supporting conditions of the market and the policy system, and the higher the opportunities for contacts and cooperation of transnational corporations, the more opportunities for attracting FDI. The proportion of FDI in the more open eastern coastal areas has been maintained at about 90% from 2001 to 2012, accounting for the vast majority of China's FDI (Yu 2007). Scholars have confirmed that openness is closely related to FDI inflow and has a positive effect (Casi and Resmini 2010; Cole, Elliott and Zhang 2009; Feng 2011; Kerr and Peter 2001). Thus, a hypothesis regarding the openness factor is proposed:

Hypothesis 5: The openness factor influences FDI inflow in Henan Province.

4.3.6 Human capital

Foreign investors are naturally inclined to those areas with higher labor quality. If the local human capital quality is high, the companies can quickly recruit the available employees, and reduce the time of staff training, costs and increase profits for enterprises. Wheeler and Mody (1992) found that in the 1980s, multinational corporations in Japan and the United States were drawn by high-quality labor, and investment locations were mostly located in developed countries and regions with high-quality labors. Scholars such as Cheng and Kwan (2000), Na and Lightfoot (2006), Xu, Liu and Qiu (2009), Liu, Daly and Varua (2013) sustain that education becomes an increasingly important determinant (Cole, Elliott and Zhang 2009).

In comparison, labor with high education means high cost. Kongrong and Yan (2002) made an econometric analysis to study the impact of human capital on the location selection and investment scale of FDI. The quantitative analysis shows that there is a significant negative relationship between the regional human capital and FDI inflow, the size of the project because of the cost.

⁵⁷ Joseph Nguyen <http://www.investopedia.com/articles/economics/11/economic-benefits-country-liberalization.asp>

The focus of this thesis is not on workers with a high level of education, but more on the needs and verification of workers at different educational levels during particular periods. In the transition society phase, labor-intensive industries need workers with lower education quality because of cost. The FDI projects in this stage are mostly about labor-intensive, low-tech, and low-value-added sectors. Although investors still have requirements on the quality of labor, the conditions are not as high as that of the capital-intensive, high-tech, and high-value-added sectors in the eastern developed regions. With the upgrading of industries, the investors will start to demand the high education level of workers, the low education level workers cannot meet the requirements of investors, and adverse effects begin to appear. The labor with high education will have a positive impact on the FDI inflow. The hypothesis regarding the effect of the human capital on FDI can be proposed as follows:

Hypothesis 6.1: The labor with the lower secondary education level has an impact on FDI inflow at the initial stage, and it will change at the later stage with the upgrading of industries.

Hypothesis 6.2: The labor with the upper secondary education level has an impact on FDI inflow at the initial stage, and it will change at the later stage with the upgrading of industries.

Hypothesis 6.3: The labor with the tertiary education level has an impact on FDI inflow at the initial stage, and it will change at the later stage with the upgrading of industries.

4.3.7 Industrial structure⁵⁸

When foreign investors decide to invest in a region, they often choose an industry with the comparative advantages and the most needed factors of production for related industries in the area. It could enable capital to obtain high returns than investments in other sectors. Regions with distinct industrial structures have a different attraction to foreign capital. If the willingness of foreign investors to devote in the second industry is higher than that of investing in agriculture, then a region with a comparative advantage in agriculture will be less attractive to foreign investment than areas with second industrial comparative advantages. Sun and Yamori (2009) examined the impact

⁵⁸ In the previous analysis of human capital, I will conduct different period's review and comparison. However, there is no way to compare the industrial structure in just 18 years (In the subsequent analysis, I have only 18 years of relevant data). Industrial structure as the macroeconomic indicator in the national economy, its change is bound to have a certain lag and inertia. The period of 18 years is too short, and it does not have enough material to support the observation in different phases.

of the industrial structure on the choice of location in China and concluded that the industrial structure of a region plays a significant role in the level of attraction in the area. Some articles used the ratio of the tertiary industry to GDP as an indicator of industrial optimization (Chen 2012; Chen 2005).

Henan was a typical traditional society stage at an early time. At this stage, the economy was in backward. Production was mainly through manual labor. It was characterized by low technology, static society, and agriculture. As shown in Figure 4-5 above, it can also be seen that until 1990, the leading industry in Henan is still the primary industry. Since the 1990s, Henan has gradually begun to transfer to the transitional society and take-off stage. The transitional society is triggered by external influence, interest, and market. The leading industry in this period is the primary industry and labor-intensive manufacturing sector. In the takeoff stage, it is the transition from the backward stage to the advanced stage, the production efficiency begins to be improved, the science and technology play roles and the agricultural productivity increases accordingly. A large number of workers transferred from primary industries to manufacturing sectors. Henan province with abundant and cheap labors became the best ideal investment place for labor-intensive industries transferred from the developed eastern regions. It is more attractive for investors to invest in agriculture-related primary sectors and labor-intensive secondary sectors. As for the tertiary sector, Henan has not reached the stages of maturity and mass consumption, and the level of industrial optimization is still far from enough. Therefore, it does not have a comparative advantage during this period, and thus, it is not attractive to investors. Then, the hypothesis can be set as:

Hypothesis 7.1: As an agricultural province, the primary industry has an impact on FDI inflow.

Hypothesis 7.2: As a province with lots of labor-intensive industries, the secondary industry has an impact on the FDI inflow.

Hypothesis 7.3: Due to the tertiary industry with no comparative advantage, the tertiary industry has an impact on the FDI inflow.

4.4 The methodology

4.4.1 Data source

The data are from: “The Chinese City Statistical Yearbook”, “Henan Statistical Yearbook”,

“Zhengzhou Statistical Yearbook”, “Kaifeng Statistical Yearbook”, “Luoyang Statistical Yearbook”, “Anyang Statistical Yearbook”, “Xinxiang Statistical Yearbook”, “Hebi Statistical Yearbook”, “Puyang Statistical Yearbook”, “Jiyuan Statistical Yearbook”, “Jiaozuo Statistical Yearbook”, “Luohe Statistical Yearbook”, “Sanmenxia Statistical Yearbook”, “Pingdingshan Statistical Yearbook”, “Shangqiu Statistical Yearbook”, “Zhoukou Statistical Yearbook”, “Xuchang Statistical Yearbook”, “Zhumadian Statistical Yearbook”, “Xinyang Statistical Yearbook” and the local statistical bulletin and the Bureau of Statistics website. According to the original data of the above statistical materials, the data for 18 cities from 1999 to 2016 were obtained by sorting and calculation (See Appendix II).

The reason for the selection of data after 1999 is that the utilization of foreign capital in some cities is relatively late and has a short history compared with other cities. To ensure consistency of statistical caliber, the study selects the data after 1999 and tries to ensure the accuracy of the original data in the process of integration. Average wage are calculated in CHY unit. The amount of FDI inflow is also denominated in CHY unit. According to the average exchange rate between the USD and the CHY in the past years, the amounts of FDI inflow are converted from US dollar unit to CHY unit.

4.4.2 The specification of the model

This thesis intends to adopt panel data to study the regional influence factors of FDI in 18 cities of Henan province based on the Sun (1998) and Na and Lightfoot (2006)’s model that used the market, labor cost, infrastructure, agglomeration, and openness. The period is from 1999 to 2016, and the research objects are 18 cities in Henan province. The study will examine the impact of market factors, cost factors, FDI agglomeration effects, infrastructure, and openness factors on FDI inflow, and the following models are established:

$$FDI_j = f (GDPrate_j, WAGE_j, CFI_j, FIXI_j, OPENNESS_j)$$

(4.1)

FDI_j denotes the total amount of FDI in the j^{th} region; $GDPrate_j$ denotes market potential in the j^{th} region; $WAGE_j$ denotes the cost of labor in the j^{th} region; CFI_j denotes the degree of aggregation of FDI in the j^{th} region; $FIXI_j$ denotes infrastructure in the j^{th} region. The dependent

variable is the amount of FDI⁵⁹. The study intend to use GDP growth rate to measure the level of local economic development and market potential; the average wage to measure labor costs; total investment in fixed assets to measure the level of infrastructure⁶⁰; the cumulative stock of FDI inflow to measure the agglomeration effect; the total import and export trade as a share of GDP to measure the openness; number of enrolled students in the lower secondary school, the upper secondary school and tertiary school to measure the level of labor quality⁶¹; proportion of the primary, secondary and tertiary industry to GDP to measure the Industrial structure and the 2008 financial crisis to be tested as a time dummy variable(See Table4-1).

The small variance in the data is required to obtain correct and consistent results from the regression model (Sattarov 2012). Therefore, the issue of variance needs to be concerned first. The basic model is extended to a log-linear model to reduce the variance in the data over the years, to eliminate the influence of different units of the variables and to transform a likely nonlinear relationship between the FDI inflows and the explanatory variables into a linear relationship; therefore, some of the variables are taken into natural logarithm form. All location determinants are lagged by one (1) period. It was due to two reasons: Firstly, decisions to undertake FDI in a current year will not be realized in the sense that actual FDI flows do not eventuate until a year later, in other words, multinationals FDI activities in a given year are based on information gathered from the previous year (Liu, Daly and Varua 2013). Secondly, for the possible interrelationship between FDI and explanatory variables, the broader market may attract more FDI, and more FDI causes further expansion of market scale, which can result in endogenous causality. The lag explanatory variables will be to purge their estimates of endogeneity (Bellemare, Masaki and Pepinsky 2017; Elango, Ma and Pope 2008; Greene 2000). In this way, the study gets a basic model (1). The

⁵⁹ FDI data published in China include the amount of the agreed investment, the actual use of the amount of investment and the number of the agreed items. Compared with the actual amount of investment, the amount of the agreed investment is indeterminate in whether the fund is in place and the scales of the items are different. Given the availability and authenticity of the data, this article selects the actual amount of foreign investment (unit: \$10000) to represent the FDI, so that it can more accurately reflect the changes in the investment. All data are from the yearbooks of Henan statistical yearbook during 1999-2017.

⁶⁰ Qianshan use railway density and road density Qingshan, Wei, and Wang Renfei, 2005. The location choice of infrastructure and foreign direct investment, *Journal of the Graduate School of the Chinese Academy of Social Sciences*, 27-33.. Guoming measured infrastructure by road density, etc. Guoming, Xian, and Yang Changzhi, 2009. Location decision of foreign direct investment in China -- spatial econometric analysis based on regional data, *World economic research* 2009, 60-64.. However, these data are not fully available at the city level. The national statistics department only provides data at the provincial level. Based on the principle of data availability, I finally took Henan Province's total investment in fixed assets to express the level of infrastructure in Henan.

⁶¹ Both primary education and lower secondary school education belong to the nine-year compulsory education stage and are enforceable by law. Therefore, it is meaningless to test the labors with primary school education level. The registration rate of nine-year compulsory education in recent years is basically 99% Henan Provincial Statistical Bureau, 2017. *Henan Provincial Statistical Yearbook of 1986*(Beijing: China Statistics Press).. In other words, the labors can basically reach the lower high school education level and it is why China's legal minimum working age is 16 years old.⁶¹ Therefore, I will selected lower secondary school, upper secondary school and higher education workers conduct further in-depth studies to identify the level of the main labors to attract FDI. [See China's Education System (Appendix I)]

CHAPTER 4

empirical strategy was to establish a benchmark model for determinants of FDI inflows and then apply the same model with more detailed factors. Considering the local characteristics of Henan Province, the study will conduct an in-depth review of labor quality and industrial structure in addition to the basic model (1). Thus, the study establishes the following equation to test the determinants of FDI inflows into Henan province, and the basic model takes the following form:

$$\ln FDI_{it} = \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} + \beta_5 OPENNESS_{it-1} + \mu_{it}$$

Model (1)

Table 4-1 Description of the variables

Variables	Variable Name	Proxy Variable	+/-
Dependent variable	FDI	Amount of actual used FDI inflow	
Independent variables			
Market potential (%)	GDPPrate	GDP growth rate	+
Physical infrastructure	FIXI	Fixed investment	+
Labor cost	WAGE	Annual wage per employee	-
Agglomeration	CFDI	The stock of FDI inflows in the previous years	+
Degree of openness (%)	OPENNESS	Total import and export trade as a share of GDP	+
Dummy 2008	dummy2008	Time dummy variable, if the year is 2008, it takes the value 1. Otherwise, it takes 0	
Labor quality(1)	SECLS	Number of enrolled students in the lower secondary school	+/-
Labor quality(2)	SECUS	Number of enrolled students in the upper secondary school	+/-
Labor quality(3)	TERS	Number of enrolled students in universities and colleges	-/+
Industrial structure(1)	PRI	The proportion of the primary industry to GDP	+
Industrial structure(2)	SEC	The proportion of the secondary industry to GDP	+
Industrial structure(3)	TER	The proportion of the tertiary industry to GDP	-

Data sources: Statistical Yearbook of Henan province and Statistics Bulletin of the National Economic and Social Development of Henan province, during the period (1999-2016).

Where, $\ln FDI$ is the dependent variable which refers to the amount of FDI inflow of 18 cities; $GDPPrate$ (percent), $\ln FIXI$, $\ln WAGE$, $\ln CFDI$ and $OPENNESS$ (percent) are independent variables, which refer to the, GDP growth rate, average wages, fixed investment, the cumulative stock of FDI inflows in the previous year, total export and import trade as a share of GDP. β_0 is a constant term.

$\beta_1, \beta_2, \beta_3, \dots, \beta_6$ are the coefficient of independent variables; i refers to ($i=1,2,3,4\dots 18$) a city; t refers to year from 1999-2016, $t=1,2,3,4\dots 20$; μ_{it} is an error term.

Explored labor quality mode2:

$$\begin{aligned} \ln FDI_{it} = & \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} \\ & + \beta_5 OPENNESS_{it-1} + \beta_6 \ln SECLS_{it-1} + \mu_{it} \end{aligned} \quad (\text{Model 2.1})$$

$$\begin{aligned} \ln FDI_{it} = & \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} \\ & + \beta_5 OPENNESS_{it-1} + \beta_6 \ln SECUS_{it-1} + \mu_{it} \end{aligned} \quad (\text{Model 2.2})$$

$$\begin{aligned} \ln FDI_{it} = & \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} \\ & + \beta_5 OPENNESS_{it-1} + \beta_6 \ln TERS_{it-1} + \mu_{it} \end{aligned} \quad (\text{Model 2.3})$$

Where, $\ln SECLS$, $\ln SECUP$, $\ln TERS$ are the variables about labor quality, which refer the number of enrolled students in the lower secondary school, number of enrolled students in the upper secondary school and number of enrolled students in universities and colleges.

Explored industrial structure model3:

$$\begin{aligned} \ln FDI_{it} = & \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} \\ & + \beta_5 OPENNESS_{it-1} + \beta_6 PRI_{it-1} + \mu_{it} \end{aligned} \quad (\text{Model 3.1})$$

$$\begin{aligned} \ln FDI_{it} = & \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} \\ & + \beta_5 OPENNESS_{it-1} + \beta_6 SEC_{it-1} + \mu_{it} \end{aligned} \quad (\text{Model 3.2})$$

$$\begin{aligned} \ln FDI_{it} = & \beta_0 + \beta_1 GDPPrate_{it-1} + \beta_2 \ln FIXI_{it-1} + \beta_3 \ln WAGE_{it-1} + \beta_4 \ln CFDI_{it-1} \\ & + \beta_5 OPENNESS_{it-1} + \beta_6 TER_{it-1} + \mu_{it} \end{aligned} \quad (\text{Model 3.3})$$

Where, PRI , SEC and TER are the variables about industrial structure, which refer the proportion of the primary industry to GDP, proportion of the secondary industry to GDP and proportion of the tertiary industry to GDP.

4.5 Empirical results

4.5.1 Descriptive data analysis

First, make descriptive statistical analysis of panel data to understand the basic information of the data. The sample size, mean, standard deviation, maximum, and minimum values of all variables are shown in Table 4-2. According to the data in the Table, this study adopts the panel data of 18 cities in 18 years, and the sample size is 324. The observed variables are LnFDI, GDPrate, LnFIXI, LnWAGE, LnCFDI, and OPENNESS. LnFDI is the explanatory variable. There are no abnormal data.

Table 4-2 Descriptive Statistics of Variables, 1999-2016

Variable	Obs	Mean	Std.Dev.	Min	Max
LnFDI	324	11.42	1.501	7.284	14.82
GDPrate (%)	324	11.52	3.029	1.700	21.90
LnFIXI	324	5.853	1.345	2.194	8.853
LnWAGE	324	9.754	0.706	8.406	11.01
LnCFDI	324	12.98	1.355	10.10	16.72
OPENNESS (%)	324	5.854	7.877	0.248	48.58
LnSECLS	324	12.31	0.738	10.08	13.45
LnSECUS	324	11.72	0.731	9.656	13.24
LnTERS	324	0.880	1.389	-2.303	4.488
PRI (%)	324	17.10	9.338	1.930	45.60
SEC (%)	324	53.43	10.38	28.10	76.70
TER (%)	324	29.41	6.659	0.305	51.28
Dummy2008	324	0.055	0.229	0	1

4.5.2 Correlation analysis of variables

The analysis of the correlation between variables is shown in Table 4-3. From the Pearson correlation coefficient matrix among the variables in Table 4-3, it can be seen that there is a significant correlation between LnFDI and other variables. Half of the correlation coefficients are above 0.5, indicating that the selected variables are linearly related to the explanatory variables, and linear regression analysis can be performed. Although some variables have a weaker correlation with LnFDI, it cannot be thought that it does not affect without considering other factors.

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Table 4-3 The relationship between FDI and variables that are used in this study during 1999-2016

	lnFDI	GDPrate _{it-1}	lnFIXI _{it-1}	lnWAGE _{it-1}	lnCFDI _{it-1}	OPENNESS _{it-1}	lnSECLS _{it-1}	lnSECUS _{it-1}	lnTERS _{it-1}	PRI _{it-1}	SEC _{it-1}	TER _{it-1}	dum~2008
lnFDI	1												
GDPrate _{it-1}	-0.0579	1											
lnFIXI _{it-1}	0.9037	-0.1194	1										
lnWAGE _{it-1}	0.893	-0.1181	0.9037	1									
lnCFDI _{it-1}	0.9386	-0.1736	0.9141	0.8753	1								
OPENNESS _{it-1}	0.2563	0.2141	0.1843	0.2361	0.2693	1							
lnSECLS _{it-1}	-0.1025	-0.1095	0.1358	-0.2216	-0.0502	-0.3728	1						
lnSECUS _{it-1}	0.4512	0.0362	0.6471	0.3252	0.4865	-0.0604	0.7601	1					
lnTERS _{it-1}	0.6896	0.0036	0.7765	0.5706	0.7285	0.2358	0.3466	0.7828	1				
PRI _{it-1}	-0.5357	-0.1366	-0.3741	-0.5232	-0.5422	-0.5193	0.5962	0.1315	-0.2985	1			
SEC _{it-1}	0.3208	0.3033	0.1486	0.3685	0.274	0.3682	-0.7074	-0.3587	-0.0539	-0.7712	1		
TER _{it-1}	0.2688	-0.2881	0.3138	0.1745	0.37	0.1406	0.2786	0.4027	0.5226	-0.185	-0.4165	1	
dummy2008	-0.0321	0.1238	0.0606	0.0452	0.0053	0.0423	-0.0148	0.0868	0.0719	-0.0427	0.1034	-0.0991	1

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The coefficients between lnFIXI, lnWAGE, and lnCFDI are 0.9037 and 0.9141, and the coefficients between lnWAGE AND lnCFDI is 0.8753. The variables with high correlation are mainly lnFIXI, lnWAGE, and lnCFDI. The remaining correlations are all well below 0.80, the point beyond which the threat of multicollinearity becomes a real concern (Judge, Hill, Griffiths, Lutkepohl and Lee 1988). In the subsequent regression analysis, so in the following panel data analysis, I will do a respective regression using these variables to avoid serious multicollinearity problems and ensure the accuracy of the estimation results. Apart from this, under normal circumstances, there was no severe multicollinearity problem.

4.5.3 Unit root test

When using time series data for model checking, it is necessary first to test the time series variables for stationarity. If regression analysis is directly performed, there may be a phenomenon of “spurious regression,” which does not reflect the existence of an equilibrium relationship between interpretative variables and explanatory variables. It is just a coincidence on the numbers. This part uses the Stata software to perform a unit root test on the data to verify the smoothness of the data. The results of the stationarity test are as follows (See table 4-4) .

In this thesis, to test whether Y_{it} includes unit roots, consider the following panel autoregressive model:

$$Y_{it} = \rho y_{i,t-1} + z_{it}' \gamma_i + \varepsilon_{it} \quad (4.2)$$

Among them, $i = 1, \dots, n$ is the unit of cross section, $t = 1, \dots, T_i$ is the time and ε is the stationary perturbation term. According to the default settings of the command xtunitroot, $z_{it}' \gamma_i$, Z represents the individual fixed effect ($Z_{it} = 1$), also known as “panel-specific means.” The null hypothesis of the panel unit root test is “ $H_0: \rho_i = 1, \forall_i$ ”, and the alternative hypothesis is “ $H_1: \rho_i < 1, \forall_i$ ”. Equation 4.3 can be written in the equivalent form:

$$\Delta Y_{it} = \delta y_{i,t-1} + z_{it}' \gamma_i + \varepsilon_{it} \quad (4.3)$$

Since the perturbation term of equation 4.3 may have autocorrelation, Andrew, Chien-Fu and James (2002) introduce the higher order differential lag term based on equation 4.3, which is called LLC test. In order to alleviate the possible cross-section correlation, Andrew, Chien-Fu and James (2002) recommend subtracting cross-sectional means from the panel data before performing the

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LLC test.

Table 4-4 Stationarity test

Variables	Statistic	p-value	Stationarity
LnFDI	-5.1547	0.0001	Stationarity ***
	-3.7055		
GDPrate (%)	-9.6989	0.0011	Stationarity ***
	-3.0518		
LnFIXI	-10.6071	0.0000	Stationarity ***
	-6.2725		
LnWAGE	-5.5153	0.0000	Stationarity ***
	-5.1144		
LnCFPI	-9.4886	0.0000	Stationarity ***
	-7.9232		
OPENNESS (%)	-7.9076	0.0136	Stationarity ***
	-2.2091		
LnSECLS	-6.9935	0.0371	Stationarity ***
	-1.7853		
LnSECUS	-7.5810	0.0006	Stationarity ***
	-3.2382		
LnTERS	-7.8857	0.0024	Stationarity ***
	-2.8249		
PRI	-7.9332	0.0000	Stationarity ***
	-5.7825		
SEC	-7.5103	0.0135	Stationarity ***
	-2.2114		
TER	-7.5844	0.0000	Stationarity ***
	-4.3207		

LLC panel unit root test method is used; its null hypothesis is “there exists unit root.” In the test process, instead of using the option “trend,” the default setting is used, that is to say, only the individual fixing effect is added. Because some variables in different regions are similar and closely related, the perturbation term of each city may have cross-section correlation. For this purpose, the option “demean” is used to alleviate cross-section correlation. The variables in the Table4-4 correspond to two statistics, one is Unadjusted, and the other is Adjusted t^* . The key to stability is P. When P is less than 0.05, it shows that it is significant at 5% level. If all variables are stationary, no cointegration test is needed. It can be seen from the above Table4-4 that the original sequence of each variable can pass the unit root test at the 5% significance level, indicating that there is no unit root in each variable, that is, stationary variables.

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4.5.4 Model estimation

4.5.4.1 Diagnoses of the model

The test step of model selection based on the method of Xiangguang and Xuanhua (2009). There are usually three choices for the estimation of the econometric model of Panel data: the pooled OLS model, the fixed effect model, and the random-effects model. The model's selection needs to be tested that is the F test to determine the pooled OLS model and fixed effect model, Breusch and Pagan LM test to determine and the pooled OLS model and random effect model, the Hausman test to determine the fixed effect model and the random effects model. In the previous multicollinearity among variables, the study will first perform a diagnosis based on the basic model (1) of the exclusion variable $\ln\text{GDP}$, $\ln\text{FIXI}$, and $\ln\text{WAGE}$. After determining the estimation of the basic model, other estimates based on the basic model will also be more accurate and valid under this diagnostic result.

Pooled OLS model and fixed effect model. The study uses the F test to verify that if the null hypothesis is rejected (Pooled OLS model). This part performs the F-test to decide on whether to judge the pooled OLS model or fixed effect model in STATA. With the `xtreg` command in STATA we can calculate F statistic and the corresponding P value: $F(17, 302) = 4.23$ and $\text{Prob} > F = 0.0000 < 0.05$. It shows that the fixed effect is very significant; that is, the fixed effect model is better than the pooled OLS model. As can be seen from Table 4-5, the results of the model F test reject the null hypothesis, that is, the Pooled OLS model is inappropriate. Then the fixed effect model is more explanatory and more accurate.

Table 4-5 The result of F-test of the basic model (1).

F test for Pooled OLS model and fixed effect model
$H_0 = \text{Pooled OLS model}$ $H_1 = \text{Fixed effect model}$
$F(17, 302) = 4.23$
$\text{Prob} > F = 0.0000 < 0.05$

Pooled OLS model and random effect model. Breusch and Pagan (1980) construct LM statistics based on the residuals estimated by OLS. If the null hypothesis is rejected, there exists the random effect. Use the `xttest0` command in STATA to perform the Breusch and Pagan LM test, and the corresponding LM statistic is 34.32, the P value is 0.0000 (See Table 4-6). It can be seen that the

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random effects model is superior to the pooled OLS model. As to which of the fixed effect model and the random effects model is better, then we next use the Hausman to test.

Table 4-6 The result of Breusch and Pagan LM test of the basic model (1)

Breusch and Pagan LM test for Pooled OLS model and Random effect model
H_0 =Pooled OLS model H_1 =Random effect model
chi2 (01) = 34.32
Prob > chibar2 =0.0000

Fixed effect model and random effect model. The fixed effect model will be chosen if the null hypothesis was rejected through the Hausman Test. The study has obtained $\text{Prob} > \text{chi}^2 = 0.0000 < 0.05$, meaning that all the null hypotheses can be rejected, the RE model is not appropriate; instead FE model should be accepted (See Table 4-7). Therefore, the study should choose the fixed effect model to estimate.

Table 4-7 The result of the Hausman test of the basic model (1)

Hausman Test for Fixed effect model and Random effect model
H_0 = Random effect model H_1 = Fixed effect model
chi2(4) = 52.46
Prob > chi2 = 0.0000

4.5.4.2 Robustness check for fixed effect model

In general, there are rigorous requirements for the fixed effect model. Although heteroscedasticity is always a potential problem, autocorrelation may be more critical in some applications (Wooldridge 2010). When performing FE model to estimate, it may have a very strong sequence correlation, and the standard errors obtained can lead to severe errors. The Woodridge test can be used to test the autocorrelation. Further modified Ward tests can be used to test the heteroscedasticity. If there is a first-order autocorrelation or heteroscedasticity, both should be corrected to ensure the accuracy and validity of the model.

First-order autocorrelation test.

Null hypothesis: H_0 : There is no first-order autocorrelation.

Wooldridge test reveals the first-order autocorrelation in the panel, The F statistic value of the Wooldridge test is $F(1,17) = 29.744$ and P-value is $0.0000 < 0.05$, which indicate that the null

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hypothesis is rejected at the significance level of 95%, and there exists the first-order autocorrelation. (See Table 4-8).

Table 4-8 The result of the auto-correlation test of the basic model (1)

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F (1,17) = 29.744
Prob > F = 0.0001

Heteroscedasticity test. The results of the Modified Wald test show that the P value is well below 0.05. (See Table 4-9). Therefore, it rejects the null hypothesis that there is no homoscedasticity, and the model exists groupwise heteroskedasticity.

Table 4-9 The result of heteroskedasticity test of the basic model (1)

Modified Wald test for GroupWise heteroskedasticity
H ₀ : homoscedasticity
chi2 (18) = 88.76
Prob>chi2 = 0.0000

If heteroskedasticity or autocorrelation occurs during model estimation, GLS is more effective under heteroskedasticity or autocorrelation (Chen 2015).

4.5.5 Estimated results

4.5.5.1 Basic model analysis

The study uses the GLS model to estimate. In Panel Data analysis, the fitting effect of model regression is mainly based on the t-test value (t-stat) and its probabilistic P value (Prob1). The larger the t-test value, the smaller the value of P, and the higher the confidence of the parameter estimation; conversely, the t-test value is lower, and the larger P-value means that the influence of variables is not significant. Observe the P value of each model variable in Table 4-10, and the overall fitting effects of the model are good. Therefore, the regression results are suitable for analysis. To avoid the severe multicollinearity, I respectively regressed the variables with the correlation coefficients of more than 0.8: lnWAGE, lnCFDI, and lnFIXI. From Table 4-10, it can be seen: the models bring no more changes; coefficients, signs, standard errors, and significant levels stay nearly the same,

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which indicates the model is robust.

Table 4-10 Regression results summary

	Dependent variables: lnFDI		
	GLS model (1)	GLS model (2)	GLS model (3)
GDPrate _{t-1}	0.040*** (0.002)	0.036*** (0.001)	0.023*** (0.001)
OPENNESS _{t-1}	-0.007*** (0.000)	-0.007*** (0.000)	-0.008*** (0.000)
Dummy2008	-0.291*** (0.034)	-0.386*** (0.014)	-0.356*** (0.046)
lnCFDI _{t-1}	0.308*** (0.022)		
lnWAGE _{t-1}		0.586*** (0.025)	
lnFIXI _{t-1}			0.679*** (0.023)
Constant	-360.336*** (7.992)	-343.540*** (6.452)	-189.099*** (12.740)
Observations	324	324	324
Number of regions	18	18	18

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

GLS model explained more significantly. The results of the GLS models show that the GDP growth rate reflecting the market size and market growth potential, the wage reflecting the labor cost, the stock of FDI showing the aggregation effect, the fixed investment reflecting the infrastructure and the openness reflecting the degree of openness are all significant at the less than 1% level, which means that the above-mentioned influencing factors have significantly affected FDI inflow in Henan Province.

Market size and potential. The estimation result shows that the market size and potential has a positive correlation with FDI inflow and statistically significant at less than 1%, which indicates that if the other explanatory variables are unchanged, economic growth rate increase by 1%, the actual use of FDI in the area will increase by 0.040%(or 0.036%, 0.023%) and it is consistent with the prior literatures and hypothesis. Tuan and Ng (1995), Head and Ries (1996), Broadman and Sun (1997), Wei, Liu, Parker and Vaidya (1999) proved that provinces with the enormous amount of GDP, high level of per capita GDP and high growth rate of GDP would attract more FDI. Therefore, it also can explain to a certain extent that the cities such as Zhengzhou, Luoyang, and Luohe, which

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have the highest growth rate of GDP in the region, attract more FDI than other cities. Although GDP in some cities is relatively low, GDP growth has been rapid in recent years, and the actual use of FDI growth has ranked at the forefront of the province, such as Jiyuan. It shows that foreign direct investors also emphasize the market potential of a region. The higher the market potential, the higher the rates of return on investment, the more willing foreign investors are to invest in the area.

Openness. Table 4-10 shows that openness has a statistically significant and negative effect on FDI inflow. In general, openness has a positive effect on attracting FDI (Majocchi and Strange 2007). There are two explanations. First, as described in Wheeler and Mody (1992)'s studies on Brazil, FDI will consciously choose to enter the region for investment in order to avoid trade barriers. So the more closed the area, the more investors choose to invest in getting around the tariff and barrier, which happens in areas with heavy tariff protection or local protection. Compared to making investments, enterprises are more likely to enter that region in the form of trade. In regions where the degree of openness is lower, local protection is serious. In order to enter the local market to get the exclusive monopoly interest in the region; investment will become a better choice. Henan is relatively closed, economically backward, and local protection is severe. Second, the foreign export scale in Henan Province is small. The products exported are mainly resource-intensive and labor-intensive products, accounting for more than 80% of the total exports in 2006 (Yang 2010). Because of the large proportion of resource products and Labor-intensive products in the export of Henan, the export of resource and labor-intensive-based products will reduce the attraction capacity of the resource and labor resources advantages to FDI. However, if the analysis scope is placed in the whole China region, the effects of openness are consistent with the previous expectations, and the openness is positively correlated with FDI inflow (Casi and Resmini 2010; Kerr and Peter 2001). Only when the analysis area is placed in a specific small area, the result will be utterly contrary to expectation. In another central province near Henan, Shanxi, a large province of exporting resources, has also had the same situation. Openness is negatively related to FDI, and this area is located in the interior of China. The economy is also backward, not very open, local protection is dangerous, and resource exports have reduced its comparative advantage (Hanjun 2011). In Rongtian Liu (2005)'s article, he studied the geographical distribution of FDI and conducted a comparative analysis of China's western, central and eastern regions and found that there was a negative correlation between openness and FDI in the central region.

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Agglomeration. Agglomeration factor has a significant and positive impact on the FDI inflow. The coefficient of $\ln\text{FIXI}$ is 0.308, which shows that if the other explanatory variables are unchanged, the stock of FDI in the past year increased by 1%, the actual use of FDI in the area will increase by 0.308%, which is the same as the hypothesis. The stock of FDI inflow has a significant positive pull effect on attracting FDI, which consistent with Cheng and Kwan (2000) and He (2002). It indicates that FDI companies attach great importance to choosing regions where foreign enterprises are concentrated.

Labor cost. The result shows that the FDI inflow in Henan is very sensitive to the changes in labor costs and has a positive effect. The coefficient is 0.586, and the significant degree is within 1%, which shows that labor cost increase by 1%, the actual use of FDI in the area will increase by 0.586%. The foreign companies tend to invest in areas with high wage levels. It is a conclusion contrary to most of the prior literatures. FDI inflow is generally negatively related to cost, which has been verified in many studies (Belderbos and Carree 2002; Fung, Lizaka, Lee and Parker 2000; Sun, Tong and Yu 2002; Wei, Liu, Parker and Vaidya 1999; Xueqiang and Shengxue 1995).

Moreover, there are also a few studies that show that FDI is positively related to labor costs (Broadman and Sun 1997; Chen 1996; Coughlin and Segev 2000; Head and Ries 1996). One explanation for this is that labor cost is an indirect measure of labor quality. The high wage means higher quality of labor. In the process of industrial optimization and upgrading, investors began to emphasize the quality of laborers and can tolerate increases in costs.

Henan is the most populous province in China with the extraordinarily abundant human resource. Labor cost has been meager compared to other regions in China (As shown in the Figure4-4 above). In fact, at the national level empirical analysis of China, mainly the labor costs are negatively correlated with FDI (Cheng, Lin and Simmons 2017; Huang and Dennis Wei 2016; Li, Angelino, Yin and Spigarelli 2017; Meisheng 2014). In 2017, Henan's per capita income ranked 23rd among 31 provinces, municipalities, and autonomous regions. Henan Province has already been selected as an ideal region with cheap labor costs and met the labor cost requirements of investors. Why are the results different from some expectation? As mentioned in the previous hypothesis formation analysis, it can only be said that it should be a dynamic process. With the changes in industrial policies and leading industries, the effects of labor costs are also changing. Investors gradually began to demand the quality of labor. Higher-paying wages can attract

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better-quality workers. It involves the demand for the quality of labors in different stages, and it is better to do a comparative analysis between different stages together with human capital factors. Therefore, a more in-depth analysis of labor costs with the human capital should be carried out in the following extended model 2.

Infrastructure. The coefficient of the $\ln\text{FIXI}$ variable that infrastructure attracts FDI inflows is 0.679, and it is statistically significant at less than 1%, which means that labor cost increase by 1%, the actual use of FDI in the area will increase by 0.679%. It shows that FDI flows into Henan are affected by infrastructure and have a positive effect. Infrastructure level is positively correlated with FDI, which is consistent with the findings of Wheeler and Mody (1992), Cheng and Kwan (2000).

The financial crisis in 2008 undoubtedly has a significant and negative impact on the FDI inflow. The flow of capital is greatly affected by the international environment.

4.5.5.2 Model analysis from the perspective of labor quality

In Table 4-11 column model 2.1 reports estimation results of basic model (1) with the variable $\ln\text{SECLS}$ accounting for the impact of the number of lower secondary school enrolled students on FDI inflow, while regressions in columns mole 2.2 and 2.3 explore the empirical impact of the indicators that refer to the labors with upper secondary school education level and the labors with tertiary school educational level. The $\ln\text{CFDI}$, $\ln\text{FIXI}$, and $\ln\text{WAGE}$ variables in the previously established models 2.1, 2.2, 2.3 have high coefficients of correlation; it will lead to multicollinearity and will affect the accuracy of the estimation results. Workers' wages are an irreplaceable factor in attracting FDI in transition and take-off stages in Henan Province and very closely related to the human capital factor. While examining the impact of different education levels of labor on FDI, wages are bound to be a crucial reference factor. Therefore, $\ln\text{WAGE}$ will be selected in combination with the quality of labor to conduct a comprehensive inspection.

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Table 4-11 Empirical results with human capital variables

Models	Dependent variables: lnFDI		
	GLS model (2.1)	GLS model (2.2)	GLS model (2.3)
GDPrate _{t-1}	0.035*** (0.000)	0.029*** (0.001)	0.035*** (0.001)
OPENNESS _{t-1}	-0.007*** (0.000)	-0.006*** (0.000)	-0.007*** (0.000)
lnWAGE _{t-1}	0.568*** (0.018)	0.516*** (0.030)	0.581*** (0.027)
Dummy2008	-0.388*** (0.008)	-0.382*** (0.022)	-0.384*** (0.016)
lnSECLS _{t-1}	0.107*** (0.012)		
lnSECUS _{t-1}		0.139*** (0.014)	
lnTERS _{t-1}			0.010* (0.005)
Constant	-353.608*** (4.212)	-353.608*** (4.212)	-347.895*** (6.524)
Observations	324	324	324
Number of regions	18	18	18

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

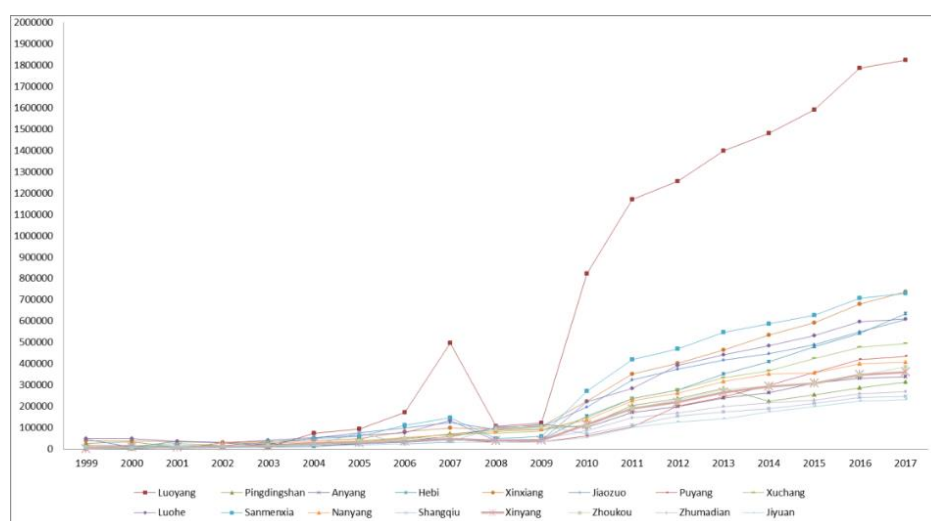
Table 4-11 shows the labors with different level of education in Henan have positive correlations to the inflow of FDI and statistically significant at less than 1%. The coefficient of the lower secondary education level is 0.107, which means that the number of lower secondary schools enrolled students are increased by 1%, the actual use of FDI in the region will increase by 0.107%. The coefficient of the upper secondary education level is 0.139, which means the number of upper secondary schools enrolled students are increased by 1%, the actual use of FDI in the region will increase by 0.139%. The coefficient of the tertiary educational level is 0.010, which means the number of tertiary schools enrolled students is increased by 1%; the actual use of FDI in the region will increase by 0.010%. The estimation results show that the inflow of FDI requires all education level workers. At the same time, the wages-indirect measure of the quality of labor has positive effects on FDI inflow. Henan is in the process of rapid economic development, from the previous Figure 4-4. In the early period of Henan, it was transferred from the agricultural society to the transitional society stage, and then it entered the take-off stage. In recent years, FDI inflows have increased tenfold compared to the past, and workers' wages have shown accelerated growth, which

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in turn masks the actual impact of labor quality and labor costs in the early time. Therefore, it is necessary to conduct a phased comparative analysis based on important time points of industrial transformation.

As shown in Table 4-11 and Figure 4-6, from 1999 to 2016, due to the external factors of the 2008 world financial crisis, the FDI inflows in 2008 showed considerable fluctuations. The focus of this study is on local, regional factors. If the two-stage comparative analysis is further carried out, the sample size will inevitably become smaller, and no matter which stage of the 2008 data is in, it will have an inevitable and fatal interference effect on the result. Therefore, although 2008 is the critical time node, it is necessary to eliminate the most profound external influence in 2008 and to ensure the accuracy of the two phases. In 2008, affected by the financial crisis, the Chinese government began to introduce various policies to guide industrial upgrading. From the previous Figure 4-4, it can be seen that in Henan's industrial structure, the secondary industry began to decline in 2009, and the tertiary sector began to rise. Changes in the industry will also directly lead to corresponding changes in the quality of labor demand. Therefore, the time node selection for 2008 is more appropriate.

Figure 4-6 The FDI inflow in Henan province from 1999 to 2017



Note: Made by the author. Source: Henan Statistical Yearbook 2017

Table 4-12 shows the changes in the level of education and labor cost factors affecting FDI inflows at different stages. No matter at what time, the growth rate, and openness has not changed and has always had the same impact on FDI inflow. The variables that change at different stages are only the variables of the workers - wages and education levels. The column model 2.1 shows that

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the variable $\ln\text{SECLS}$ have no significant but positive effect during 1999-2007, while it becomes the significant and negative effect on FDI inflow during 2009-2016. The column model 2.2 reveals that the variable $\ln\text{SECUS}$ has the positive impact and no statistically significant during 1999-2007, while it becomes negative effect and statistically significant at less than 5% on FDI inflow. The column model 2.3 shows that the variable $\ln\text{TERS}$ has a statistically significant and negative effect in the first period and then becomes the positive effect on FDI inflow. At the same time, wages have also shifted from negative to positive in all the models.

It indicates that in the early transitional society, the leading industries were low-tech and labor-intensive industries. Labor-intensive sectors emphasize the costs, and low wages are easily attracted to related FDI projects, especially from the coast (See Figure 4-3). Low-wage, low-tech industries can only attract laborers with low educational level, which is why the estimation results show that the variables with lower education levels have a positive effect on FDI and wages have a negative effect.

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Table 4-12 Empirical results with human capital variables during 1999-2007 and 2009-2016

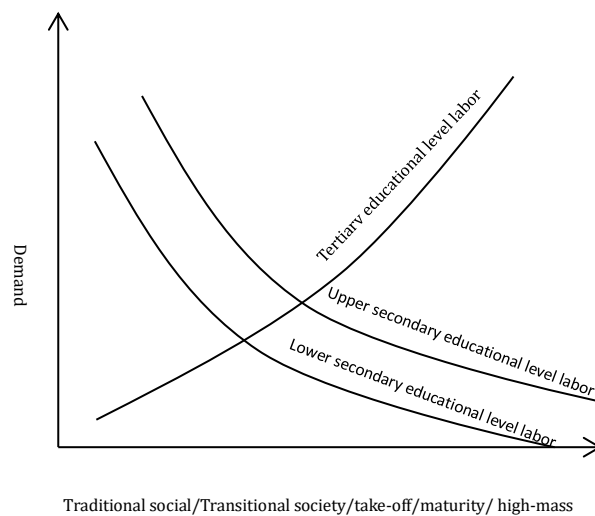
	Dependent variables: lnFDI					
	1999-2007 GLS Model2.1	2009-2016 GLS model2.1	1999-2007 GLS Model2.2	2009-2016 GLS Model2.2	1999-2007 GLS Model2.3	2009-2016 GLS Model2.3
GDPrate _{t-1}	0.050*** (0.009)	0.028*** (0.004)	0.046*** (0.009)	0.029*** (0.006)	0.051*** (0.009)	0.019*** (0.005)
OPENNESS _{t-1}	-0.013 (0.012)	-0.007*** (0.001)	-0.011 (0.010)	-0.010*** (0.003)	-0.011 (0.010)	-0.006*** (0.001)
lnWAGE _{t-1}	-0.230 (0.267)	0.722*** (0.095)	-0.351 (0.237)	0.738*** (0.100)	-0.464 (0.326)	0.545*** (0.118)
lnSECLS _{t-1}	0.304 (0.195)	-0.278*** (0.082)				
lnSECUS _{t-1}			0.284 (0.196)	-0.330*** (0.106)		
lnTERS					-0.207** (0.101)	0.072 (0.046)
Constant	-533.030*** (72.068)	-197.736*** (27.118)	-493.657*** (87.947)	-186.256*** (31.590)	-687.683*** (130.182)	-219.416*** (25.757)
Observations	162	144	162	144	162	144
Number of region	18	18	18	18	18	18

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

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With the upgrading of the industry and government guidance, in preparation from the take-off to maturity stage, the technological content of the leading industries increase, the high quality of laborers will be required, and wages will rise accordingly. It is why from 2008 onwards, workers with a lower education level started to have a negative effect on FDI, and workers with a higher education level turn positive from the previous negative effects. Figure 4-7 illustrates the demands of labors with diverse levels of education at different stages. In the initial phase of the economy, due to the characteristics of the leading industries, there is more demand for low-education labors and less demand for high-education labor, but with the upgrading of industries, economic development, and the demand for low-education labor decrease, while the demand for labors with higher education levels gradually increases.

Figure 4-7 Demand for the quality of labors at different stages



Note: Made by the author

4.5.5.3 Model analysis from the perspective of industrial structure

In Table 4-13 column model 3.1 reports estimation results of the basic model (1) with the variable PRI accounting for the impact of primary industry on FDI, while regressions in columns model 3.2 and 3.3 explore the empirical impact of the indicators that refer to secondary and tertiary industry.

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Table 4-13 Empirical results with industrial structure variables

Dependent variables: lnFDI			
	GLS model(3.1)	GLS model (3.2)	GLS model (3.3)
GDPrate	0.039*** (0.001)	0.034*** (0.000)	0.027*** (0.001)
OPENNESS	-0.007*** (0.000)	-0.007*** (0.000)	-0.007*** (0.000)
lnWAGE	0.774*** (0.027)	0.472*** (0.019)	0.359*** (0.028)
Dummy2008	-0.372*** (0.017)	-0.399*** (0.008)	-0.395*** (0.019)
PRI	0.029*** (0.001)		
SEC		0.004*** (0.000)	
TER			-0.018*** (0.000)
Constant	-341.037*** (5.932)	-367.644*** (4.639)	-409.085*** (7.045)
Observations	324	324	324
Number of regions	18	18	18

Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

It can be seen that the three industries in Henan have very significant correlations to the inflow of FDI. The coefficient of the primary industry is 0.029, and the primary industry is increased by 1%, the actual use of FDI in the region will increase by 0.029%. The coefficient of the secondary industry is 0.004, and the secondary industry is increased by 1%, the actual use of FDI in the region will increase by 0.004%. The coefficient of the tertiary industry is -0.0018, and the tertiary industry is increased by 1%, the actual use of FDI in the region will decrease by 0.0018%. Under the background of transitional and take of stage and the policy guidance, foreign investors, mostly invest in the secondary industry, and the secondary industries in the cities of Henan Province have a solid foundation. As a vast agriculture province, Henan has an absolute advantage in the primary sector. With the tremendous comparative advantage in labor-intensive industries and agriculture, foreign investors tend to invest in labor-intensive and agriculture industries. The increase in the proportion of the tertiary sector in Henan Province will reduce the total amount of FDI absorption, which is also confirmed in the western region and in the central area from 1986 to 1991 (Rongtian Liu 2005). From the Figure 4-5, although the proportion of the tertiary industry has risen, the

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leading industry at this stage is still the secondary industry, and the tertiary industry has not yet formed the comparative advantage relative to the primary and second sectors. As a result, the tertiary industry played the opposite role in attracting FDI inflow.

4.6 Summary

The hypothesis validation of this study is summarized in the following Table4-14:

Table 4-14 Hypothesis validation summary

Hypothesis	Result
<i>H1: Market factor influences FDI inflow in Henan Province.</i>	Support
<i>H2: Infrastructure factor influences FDI inflow in Henan Province.</i>	Support
<i>H3-1: In the stage of transition society, labor costs have an impact on FDI inflow.</i>	Support
<i>H3-2: With industrial optimization and upgrading and entering the take-off stage, labor costs as a measure of labor quality began to change and have a different impact on FDI inflow.</i>	Support
<i>H4: The agglomeration influences FDI in Henan Province.</i>	Support
<i>H5: The openness factor influences FDI inflow in Henan Province.</i>	Support
<i>H6-1: The labor with the lower secondary education level has an impact on FDI inflow at the initial stage, and it will change at the later stage with the upgrading of industries.</i>	Support
<i>H6-2: The labor with the upper secondary education level has an impact on FDI inflow at the initial stage, and it will change at the later stage with the upgrading of industries</i>	Support
<i>H6-3: The labor with the tertiary education level has an impact on FDI inflow at the initial stage, and it will change at the later stage with the upgrading of industries.</i>	Support
<i>H7-1: As an agricultural province, the primary industry has an impact on FDI inflow.</i>	Support
<i>H7-2: As a province with lots of labor-intensive industries, the secondary industry has an impact on the FDI inflow</i>	Support
<i>Hypothesis7-3: Due to the tertiary industry with no comparative advantage, the tertiary industry has an impact on the FDI inflow.</i>	Support

In the vast literatures, the regional factors that attract FDI are: market size, market potential, openness, infrastructure, wage, and agglomeration and have significant effects on FDI. In this light, this study analyzes the various regional factors affecting the location distribution of FDI by constructing 18-year panel data GLS models of 18 cities in Henan province.

The empirical results clearly show that FDI in Henan province tends to flow to regions with high GDP, fast GDP growth, relatively low openness, high agglomeration, and better development of the primary and secondary industry. The openness has a significant negative effect on attracting

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FDI, which is contrary to the expectation. In order to obtain monopoly benefit, bypass the local protection, investing in areas with low openness would become an ideal choice.

As for the labor quality in attracting FDI inflow, unlike previous studies, many articles used only one proxy variable to represent human capital- higher education (Lu, 1997, Sun et al., 2002, Cheng and Kwan, 2000b) (Qian and Zhaoxia 2006). This study examines the effect of different level of labor quality on the FDI inflow. In the transitional society and take-off stage, when the leading industry is the labor-intensive industry, low-educated workers are more popular, and wages have a negative effect. When in the process of the industry optimizes and upgrades, the demand for high-education workers increases, and as an indirect measure of labor quality, wages began to have a positive effect on FDI. As for the industrial structure, in the context of Henan's economic stage, the industries with comparative advantages are the primary and secondary industry and have factors of production that apply to the development of these leading industries, which have a positive effect on FDI. The tertiary industry is a sign of industrial optimization. Moreover, the insufficient comparative advantage leads to its negative effect on FDI.

CHAPTER5 THE REGIONAL DETERMINANTS OF FDI IN HENAN PROVINCE FROM THE MICRO PERSPECTIVE

There are very few studies that investigate the more detailed facts in the form of questionnaires, and few people examine the factors of production as an essential factor to FDI. This chapter will integrate the variables related to factors of production for a holistic test and make the statistical analysis of the collected questionnaires. The paper is structured as follows. Section 1 provides the factors and hypothesis. Section 2 shows the research methodology. Section 3 provides data analysis and the results.

5.1 Determinants of FDI and hypothesis development

This chapter examines the regional factors that cause FDI from the perspective of foreign investors. Some of the determinants overlap with the previous chapter. A brief introduction to the factors that have been discussed before will be given in this part. Cost, infrastructure, and openness are all crucial factors in attracting foreign investment as discussed above.

5.1.1 Politics environment

Dunning (1973) believes that enterprises will be affected by the investment environment when making overseas investment choices, and the factor includes the attitude of the host country's government, political stability, exchange rate, and other factors. Woodward and Rolfe (1993) used the Conditional Logit Model for empirical analysis of export-oriented vendors in the Caribbean region. It is found that political stability has a positive correlation with investors when choosing the location. Deng, Li and Chen (1997), when assessing China's investment environment, argues that it should include the social, political, and economic aspects. The United Nations Commission on Trade Development (UNCTAD, 1997) in the *“Towards the 2001 International Investment Trend Report”* mentioned the factors such as market growth, market size, and political and social stability are the primary considerations for the multinational foreign investment in the future. Sun, Tong and Yu (2002) analyzed the impact of FDI in China's significant provinces from 1986 to 1998, and it is found that for the whole country, the stability of politics and the degree of openness of its trade have vital relationships with FDI inflow.

The environmental factors of the host country will affect the willingness of the company to invest overseas (Root 1994). The relevant investment evaluation model also recommended that companies should consider the political and legal environment and economic environment (Farmer and Richman 1966). Therefore, this study proposes the following hypothesis:

Hypothesis 1: Political environment factor will have an impact on FDI

5.1.2 Economic environment

According to Losch (1954)'s theory of profit maximization, independent economic entities choose the region that will bring the most profit. Economic space is balanced by the interaction between production, demand, and transport distance, ultimately maximizing the benefits of economic individuals. Market conditions are one of the critical factors affecting the location choice of FDI enterprises. Market factors have a substantial impact on the location of FDI, especially for investors seeking markets (Dunning 1998). There is no doubt that China's enormous market capacity and market potential have a strong appeal to foreign investors. Scholars have shown that the size of the market and FDI positively related (Cheng and Kwan 2000). It can be seen that the better the general investment environment, such as the economic situation of a country, the more attractive the company will go to invest (Dunning 1973; Sun, Tong and Yu 2002; Tsai 1991). Therefore, this study proposes the following hypothesis:

Hypothesis 2: Economic environmental factor will have an impact on FDI.

5.1.3 Openness

The higher the degree of openness, the more open the market will be and the more attractive it will be to investors. Therefore, this study proposes the following hypothesis:

Hypothesis 3: Openness factors will have an impact on FDI.

5.1.4 Factors of production

The better the production environment in the host country, the more attractive it is for the investors (Root 1994). Woodward and Rolfe (1993) found that the agglomeration effect on production is an important factor in attracting Japanese manufacturers to invest. Daniels, Radebaugh and Sullivan (1998) considered the main motives for companies to engage in FDI:

improving sales volume, acquiring resources, seeking other sales and supply channels, minimizing the risk of competition and political motivation. The resource includes the acquisition of raw materials and human resources. Brush and Chaganti (1999) explored the choice of overseas location decision-making for multinational corporations. He studied from the perspective of international manufacturing strategy and found the evaluation of location selection includes network structure, close to the production and external environment. It is difficult to use which proxy variable to represent factors of production when doing macro data analysis. However, it is another crucial factor that cannot be ignored by investors companies. There are more or fewer parts of factors of production in the above literatures, and these factors will be tested in combination. The factors of production include labor, capital, raw materials, technology, and the environment that provides the factors: agglomeration and supply chain. Therefore, this study proposes the following assumptions:

Hypothesis 4: Factors of production will have an impact on FDI.

5.1.5 Cost factor

In addition to the global layout strategy to enhance competitiveness, FDI enterprises are also affected by the harsh investment environment of the home country. The pursuit of low production costs has become the motive of overseas investment. Many studies have shown that overseas investment is based on factors such as low wages and low land costs in the host country. Sun, Tong and Yu (2002) analyzed the factors affecting FDI in China's major provinces from 1986 to 1998 and the results showed that wages had a negative relationship with FDI inflow before 1991. Previous studies have analyzed labor costs, but the combined the other production costs of a region are also issues that investors must consider, not just labor costs. Companies invest because they focus on low costs, and low cost is one of the ways for companies to gain competitive advantage, and also affect their global strategy. Therefore, cost reduction is one of the main factors affecting companies' decision-making in direct investment (Griffin and Pustay 1996). Therefore, this study proposes the following hypothesis:

Hypothesis 5: The cost factor will have an impact on FDI.

5.1.6 Infrastructure

The better the infrastructure environment, the more attractive it is for the overseas investors,

and the infrastructure generally includes transportation, information, finance, and business systems. Therefore, this study proposes the following hypothesis:

Hypothesis 6: The infrastructure factor will have an impact on FDI.

5.1.7 Difference hypothesis

According to the different investment factors of the enterprise, this study divides it into different clusters. Each cluster member has a different understanding of the importance of each factor. Therefore, this study proposes the following hypothesis:

Hypothesis 7: Clusters that are valued by different factors will have significant differences in cognitive considerations for each FDI factor.

In the analysis and discussion of the factors affecting the decision-making of FDI of enterprises, Yang and Wang (2001) believe that investors will be subject to the enterprises' characteristics when formulating decisions. Different companies have different investment considerations. The entity characteristics include entity size and establishment time. Therefore, this study establishes the following hypothesis:

Hypothesis 8: Different enterprises characteristics will have significant differences in cognitive considerations for each FDI factor.

Hypothesis 9: Different enterprises characteristics will have significant differences in cognitive considerations for FDI.

Entity size is one of the indicators to measure a company's operating capacity and resources. The larger the scale of the manufacturer, the more resources it has, the more capable it is to internationalize and engage in FDI, based on empirical results (Agarwal and Ramaswami 1992). The longer a company is established, the more mature its operations and the more stable its perception of investment. Therefore, the study establishes the following hypothesis:

Hypothesis 8-1: Enterprises size will have significant differences in FDI factors

Hypothesis 8-2: The investment period of enterprises has significant differences in FDI factors

In previous studies, it was found that the industry has a significant impact on FDI. Cultural proximity will have a positive impact on FDI(Chen 1996; Kolstad and Wiig 2012)⁶². So here are the hypotheses:

Hypothesis 9-1 Companies in different industries have significant differences on FDI.

Hypothesis 9-2 Companies with Chinese cultural background and other companies with no Chinese cultural background have significant differences on FDI.

5.2 Research design and methods

5.2.1 Research structure

When investing, enterprises are mainly influenced by the environment of the host country, in addition to considering the internal factors of the enterprise. In terms of the investment environment, the selection of variables in this study is mainly based on the relevant domestic and FDI researches.

5.2.2 Definition and measurement

5.2.2.1 Definition and measurement of factors affecting FDI

According to the literature review, the factors affecting the willingness of enterprises to invest mainly include political and economic environment, openness, and the factors of production, cost, and infrastructure. The names or topics of factors measured by subjects are shown in Table 5-1 below and see Appendix I for the questionnaire:

⁶² Although this is an article on China's outward FDI, the cultural impact should be common.

Table 5-1 List of measurements of factors affecting FDI

Factors	Measurement
Political Environment	1. Local social stability
	2. Local government incentives
	3. Local government service quality and sincerity
	4. Consists of local government policy
Economic Environment	5. Average income of local residents
	6. Size of the economy
	7. Growth of the gross national product
Openness	8. Local market openness
	9. Local export competitiveness
	10. Local export quotas
Factors of production	11. Local financing
	12. Local supply of raw materials
	13. Local supply of labor force
	14. Local quality of labor
	15. The same types of manufacturers in the region.
	16. Support industry and related industry chain
	17. High industry concentration(industrial park)
Cost	18. Local land cost
	19. Local wage
	20. Local transport costs
Infrastructure	21. Local water and power supply, quality and price
	22. Local communication facilities
	23. Establishment and operation of local related units for infrastructure service
	24. Local railway transportation is convenient or not
	25. Local road transportation is convenient or not
	26. Local air transportation is convenient or not

The meanings represented by each subject are described as follows:

- I. Political environment: The political environment refers to the general political environment of the host countries. Therefore, including political government conditions, social security, government incentives, and service, and consists of local government policy.
- II. Economic environment: The economic environment refers to the general investment economic environment of the host countries, mainly including the local economy, market conditions, economic development potential, and the other general external environment.
- III. Openness: Openness refers to the degree to which all aspects of economic exchanges between countries or regions and other countries or regions are integrated into the

international economy and the degree of dependence on the international economy. Therefore, therefore, the study chose the subjects closely related to external trade.

- IV. The factors of production: refers to the acquisition of factors of production, including labor, capital, raw materials, and technology. Therefore, the factors of production can be measured from the agglomeration effect and other factors of production. However, this factor does not include the cost of the acquisition of elements, but only the supply and acquisition of the factors of production.
- V. Cost factor: refers to the actual cost of corporate investment, and therefore includes the cost of land acquisition, labor, and transportation.
- VI. Infrastructure factor refers to the general infrastructure environment provided by the investing country or investment location, including its geographical convenience, and the public facilities and services provided to the enterprise.

5.2.2.2 Definition and measurement of FDI

The factors that determine FDI can be measured by how satisfied they are with their investment and whether additional investment or capital will be conducted in the future. See Table 5-2 for details.

Table 5-2 List of measurements of FDI

	Measurement
FDI	27. Investment Satisfaction
	28. Raise additional capital/investment willingness

5.2.2.3 Measurement of Enterprise characteristics

The questionnaires in this study designed seven items on the necessary data of individuals and enterprises and the current of the enterprises, as shown in Table 5-3:

Table 5-3 List of enterprise statistics items

Enterprise Statistics items	Category
Respondents(Job title)	1. Chairman 2. General Manager 3. Vice Manager 4. Department Manager 5. Secretary 6. Other
Investment regions	1. Northern Henan 2. Central city belt 3. Southern Henan
Investment period	1. Less than 3 years 2. 4-6 years 3.7-9years 4. More than 10 years
Investment industry	1. Agriculture, forestry and animal husbandry 2. Mining 3. Food and Beverage, 4. Textile 5. Chemicals 6. Plastic 7. Metal 8. Machine equipment 9. Housing and Construction 10. Conveyance 11. Other manufacturing industries, 12. Information service 13. Communication 14. Wholesale and retail 15.Logistics 16. Catering 17. Entertainment 18.Tourism 19.Trade 20. Finance 21. Other services
Enterprise registered capital	1.10 million (CHY) or less 2.10 - 30 million (CHY) 3. More than 30 million (CHY)
Number of employees	1. 1-100 2.101-200 3.201-300 4.301-400 5.401-500 6. More than 500
Enterprise operation mode	1. Wholly-foreign own 2. Sino-foreign joint ventures 3. Sino-foreign Cooperative 4. Other

5.2.3 Research design

5.2.3.1 Questionnaire design and scale measurement

5.2.3.1.1 Scale selection

There are four scales of questionnaires: Nominal Scale, Ordinal Scale, Interval Scale, and Ratio Scale. Since the data collected in this study questionnaire are discrete, the ordinal scale will be used as the measure. The design of the questionnaire in this study is based on a comprehensive reference to the relevant literatures and interviews with scholars and experts. In order to measure the degree of feelings of the respondents in each factor, the study decided to use the Likert five-point scale in the scale section.

5.2.3.1.2 The content of the questionnaire

Churchill and Iacobucci (2006) believe that the questionnaire design consists of nine steps, which are 1. Determine the information to be searched; 2. Determine the form of the questionnaire and the method of implementation; 3. Determine the content of each question; 4. Decide on each question response form; 5. Determine the wording of each question; 6. Determine the order of the question; 7. Determine the characteristics of the questionnaire; 8. Test each step and then correct it when needed; 9. Pre-test the questionnaire and fix at the time. Based on the content of this study

and the reference to the Churchill and Iacobucci (2006) questionnaire design process, the process of designing the questionnaire was determined by the following nine steps:

I. Collect relevant information

This study first collects information on the status of development in each region, as well as the motivations of investors and factors affecting investment.

II. Decide on the form and methods of the questionnaire

According to the content of this study, the questionnaire form is determined, and the questionnaire is distributed according to the actual situation, supplemented by internet telephone, and individual interview methods.

III. Decide on the content of each question

The questions design should be clear and consistent with the needs of the study and then check if the questions need to be merged or deleted.

IV. Determine the types of each question.

Determine the scale used in the questionnaire and the types of questionnaire.

V. Decide on the wording of each question

The statement of the questionnaire should be as colloquial as possible, and the semantics should be as precise as possible so that the respondent has no ambiguity.

VI. Determine the order of the questions

All questions are systematically organized and summarized so that respondents can clearly understand what each part of the question is about.

VII. Determining the characteristics of the questionnaire

Determine the length of the questionnaire, the quality of the paper, the font size, comfort, whether the respondents will miss the information, and the confidentiality of the information.

VIII. Review each step and correct it if necessary.

Review the process and complete the first draft after the inappropriate part is revised.

IX. Pretest questionnaire and modification

After the first draft of the questionnaire was completed, the questionnaire was sent to some of the respondents to assess the time to complete the questionnaire, the clarity of the questionnaire, and the consistency between the questionnaire and the actual situation. Based on the results, the length of the revised questionnaire, the number of questions, the wording of the questionnaire

and the layout design were examined one by one.

After considering the research project, this study decided to adopt the Likert five-point scale. The measurements of importance scale, commonly used scales are 1. Simple satisfaction scale; 2. Mixed-scale; 3. Expectation scale; 4. Attitude scale, and 5. Affect scale, where the mixed scale is simple and convenient, easy to read, and adopted by most scholars.

5.2.3.2 Questionnaire content

The content of this research questionnaire is divided into two parts: the first part is the necessary information of the respondents and the corporations they belong to; the second part is mainly to understand the importance of the factors affecting FDI in the view of the respondents, that is, to understand what factors have an impact on FDI. The questionnaire is shown in Appendix I.

5.2.3.3 Sampling design

Churchill and Iacobucci (2006) believed that the sampling process should contain the following six steps: 1. Define the target parent; 2. Select the sampling structure; 3. Select the sampling method; 4. Determine the size of the sample; 5. Select the sample element; 6. Collect the desired material from the selected sample elements. After referring to the sampling process of the above scholars, the study decided to refer to the sampling program proposed by Churchill and Iacobucci (2006) as the sampling method for this study.

According to the questionnaire as mentioned above design and sampling method, and with the content and the object of this research, the survey object, sampling method, sampling object, and survey method is described as follows:

I. Object of survey

This study focuses on the factors that influence FDI.

II. Sampling methods and sampling objects.

As of September 2017, there were approximately 6,250 FDI registered in the Henan Administration of Industry and Commerce. Therefore, the study used these 6,250 companies as the sampling target. The questionnaire will be distributed to the department or personnel responsible for investment development.

III. Survey method

The survey methods of enterprises can be divided into four methods: personnel, telephone,

mailing, and online survey. Taisheng (2007) thinks that the following seven items must be considered when deciding which survey method to use: 1. The ability to deal with the complexity of the questionnaire; 2. The time required to complete the questionnaire; 3. The correctness of the data; 4. The control of the interviewer's effect; 5. The control of the sample; 6. The time required to complete the investigation; 7. The rate of response; 8. The cost; 9. The advantages and disadvantages of these four survey methods are shown in Table 5-4 below:

Table 5-4 Advantages of the four survey methods

The item of Survey considerations	Personnel	Telephone	Mailing	Online
Ability to deal with the complexity of the questionnaire	Excellent	Good	Bad	Good
The time required to complete the questionnaire	Excellent	Good	Mediocre	Good
Correctness of data	Mediocre	Good	Good	Good
The control of the interviewer's effect	Bad	Mediocre	Excellent	Excellent
The control of the sample	Mediocre	Excellent	Mediocre	Mediocre
The time required to complete the investigation	Good	Excellent	Mediocre	Good
The rate of response	Mediocre	Mediocre	Mediocre	Mediocre
The cost	Mediocre	Good	Good	Mediocre

Source: Taisheng (2007)

Therefore, after the evaluation of the four methods, the personal and online surveys were finally taken. The local persons were trained to use the ways of face-to-face surveys and pushing the electronic questionnaires online to the respondents, which can ensure: 1. The respondent's answering time is short; 2. The question is not too long; 3. The questionnaire response rate can be improved immediately by the face-to-face interview or instant online communication; 4. For the complexity of the questionnaire, the subject can be more easily understood through communication.

5.2.3.4 Statistical analysis methods and applications

After sorting out the collected questionnaire data, this study mainly uses SPSS and Amos statistical software for data analysis. The following is a brief introduction to the statistical methods and applications applied in research.

5.2.3.4.1 Descriptive statistical analysis

Using basic statistics to describe the data collected in this study, the research can get a preliminary understanding of the basic information of the research, and describe the mean and standard deviation of the degree of influence of each factor. The score represent the scale from 1 to

5. The average is used to indicate the respondent's perception of the impact of each factor. The high average score indicates that the question is highly influential; the standard deviation indicates whether the respondents' perceptions of the questions are similar, the smaller the standard deviation, the more consistent the views of the respondents.

5.2.3.4.2 Factor analysis

Factor analysis is a statistical technique for studying the relationship between a group of observed items. It can detect the correlation structure between variables in a group of interrelated variables, classify the variables, and condense a large number of variables into a few independent factors (Chen 2004). Therefore, this study will analyze the variables of the factors affecting FDI in order to understand the factors affecting FDI. The steps of the factor analysis are as follows (Chen 2004):

- I. Decide on the number of factors to be selected: Principal Component Analysis is used as the factor selection method, and then, according to the Kaiser principle, the factor whose characteristic value is greater than 1 is retained.
- II. Factor rotation: In order to make the coefficient of the factor loading of each common factor very large, the varimax rotation method is used, which makes no correlation between two factors.
- III. Factor naming: According to the results of the previous classification, the characteristics of each factor are appropriately named. The naming criterion is based on the factor with the most substantial load value.
- IV. Obtain the factor score: the factor score representing the overall evaluation of each factor is obtained to use for the advanced analysis.

5.2.3.4.3 Cluster analysis

Junying (2000) believed that the purpose of cluster analysis is to identify certain similarities in characteristics and divide these things into groups according to the characteristics, so that things in the same cluster are highly homogenous, and the things in different clusters are highly heterogeneous. Junying (2000) believes that cluster analysis is an application analysis technique that analyzes sample observations, assigns samples with similar characteristics to specific groups, and finally forms clusters of many different sets.

In this study, the factors obtained from the factor analysis are used as clustering variables, and the enterprise is clustered. This study uses a two-stage clustering method. Firstly, the Euclidean distance is used to determine the number of clusters by the Ward minimum variance method in the hierarchical clustering method, and then the K-Means method of the non-hierarchical clustering method is used to group the clusters. Through the clustering results, the characteristics of each cluster can be known.

5.2.3.4.4 Variance analysis

The variance analysis is mainly concerned with analyzing the sources of variations and then comparing them to see if there are significant differences in the results of different variables (Wanyi and Qinghe 2000).

- I. Based on the cluster analysis, it is tested whether there are significant differences in the cognitive levels of different factors that value the importance of clusters for various FDI factors.
- II. Verify that different enterprise characterization variables make a significant difference to the FDI factors.
- III. If significant results were obtained, the Duncan post-mortem comparison was further used to determine which groups were significantly different in all groups.

5.2.3.4.5 Reliability and validity analysis

“Reliability” indicates the reliability of a measurement tool. In other words, in terms of the stability of the result, the results of multiple tests on the same test must be consistent(Chen 2004). This study adopts the most commonly used reliability coefficient Cronbach's α value to determine the internal consistency of the questionnaire, and then delete the inappropriate variables for advanced analysis. In general, if the reliability coefficient is greater than 0.7, it is acceptable, lower than 0.35 is not effective. The formula for calculating Cronbach's α coefficient is as follows(George 2011):

$$\alpha = \frac{kr}{1 + (k - 1)r} \quad (5.1)$$

Where:

k denotes the number of items in the scale.

r denotes the average correlation between pairs of items.

5.2.3.4.6 Structural equation modeling

Structural Equation Modeling (SEM) is a statistical method for testing the relationship between manifest variables and latent variables (Chen 2004; Hoyle 1995), including measurement models (describe the relationship between observable variables and latent variables) and structural equation models (describe the relationship between potential endogenous and exogenous variables). Although SEM and other multivariate statistical methods are based on the assumptions of linear statistical models and some observations, SEM has three advantages: causal relation, association isolation, and directionality. Hoyle (1995) proposed that theoretical support must be provided in the path diagram of the relationship hypothesis in order to use the directional arrows to describe the causal relationship in the SEM. Chen (2004) pointed out that in the causality model, variables are divided into two categories: exogenous variables and endogenous variables. Exogenous variables are the causes of endogenous variables to follow changes. Endogenous variables are the result of changes with exogenous variables. This study mainly explores the regional factors affecting the FDI of enterprises, to understand which the essential influencing factors are. The construction process of SEM mainly refers to Hair, Anderson, Tatham and Black (1995).

The structural equation model is also called the covariance structure model. It consists of two parts: the measurement model and the structural equation model. The measurement model is mainly used for factor analysis to test the relationship between latent variables and manifest variables (observed variables). The general form of the structural equation model (SEM) is as follows:

$$X = \Lambda_x \xi + \delta \quad (5.2)$$

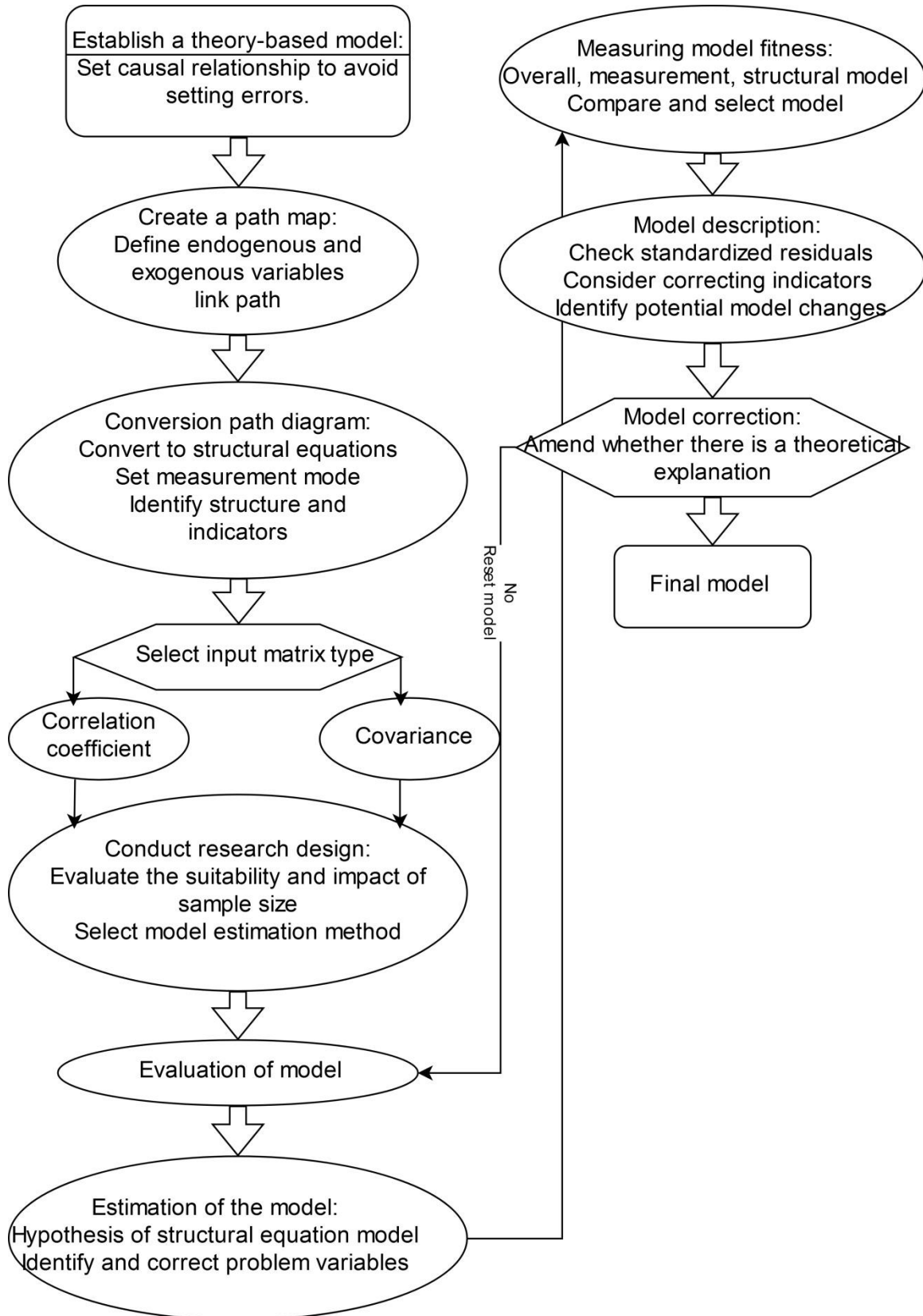
$$Y = \Lambda_y \eta + \varepsilon \quad (5.3)$$

These two equations are measurement equations, which are used to test the relationship between the exogenous latent variable ξ and exogenous observed variable X , and between the endogenous latent variable η and endogenous observed variable Y , respectively. Λ_x represents the factor load matrix of exogenous observed variable X on the exogenous latent variable ξ . Λ_y denotes the factor load matrix of endogenous observed variable Y on the endogenous latent variable η . δ and ε denote the measurement errors of X and Y , respectively.

$$\eta = \beta\eta + \Gamma\xi + \zeta \quad (5.4)$$

Equation 5.4 is a structural equation to test the causality between potential variables. Γ is the influence matrix of the external dependent variable on the endogenous dependent variable. β is the regression coefficient between potential internal variables. Both β and Γ are path coefficient matrices, in which the former reflects the relationship between endogenous latent variable η , the latter represents the influence of exogenous latent variable ξ on the endogenous latent variable η , and ζ denotes the residual of the structural equation. The analysis process is shown in Figure 5-1:

Figure 5-1 SEM analysis flow chart



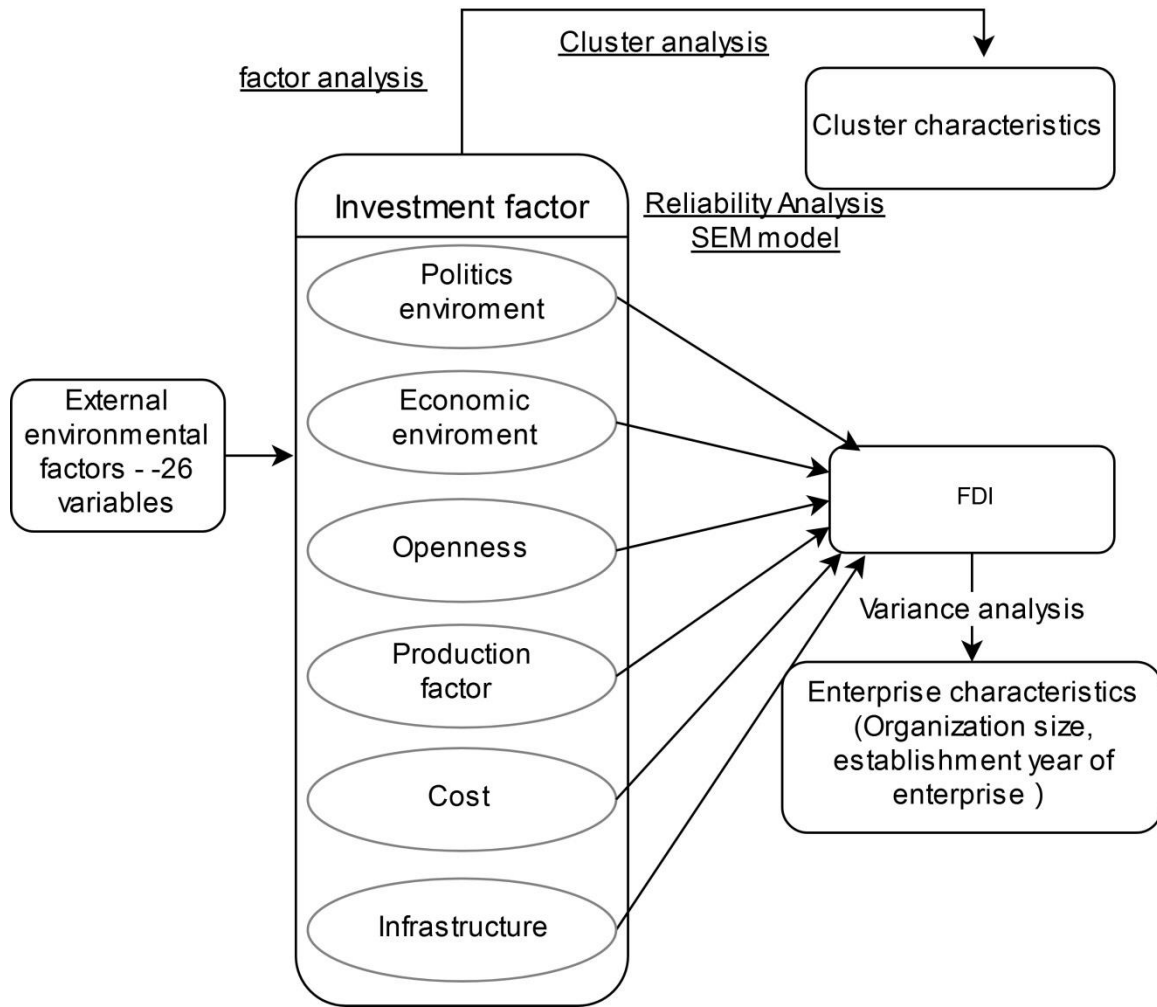
Source: Taisheng (2007)

5.2.3.4.7 Summary

This part aims to explore the research method. Firstly, through the establishment of the research structure and hypothesis, the subject of this research is clearly outlined. Then refer to the research design process of the relevant study, and then select the survey method suitable for the research, design the questionnaire form, sampling method and sampling object in line with the purpose of the research. Finally, the introduction of the statistical analysis methods to be used in this study and the application of this research are mainly aimed at establishing methods that are most suitable for the study to achieve the research purpose.

The methods of this study are shown in Figure 5-2, which aims to explore the influence of various regional factors such as political environment and economic environment factors, openness, factors of production, cost factors and infrastructure factors on FDI. In the considerations of factors, this study condenses 26 variables into several common factors through factor analysis and divides the respondent enterprises into different clusters. After the sample data has been analyzed for reliability and validity, the impact of the factors on FDI are discussed through the construction of the SEM. Whether the factors are different in the clusters and the characteristics of the company have different impacts on FDI, which will be performed by the variance analysis. In the past, related FDI research usually constructed the relationship between the influencing variable and FDI in a regression manner, and rarely used the SEM method to analyze the causal relationships between variables. Therefore, the study attempts to use the SEM method to explore the relationship between variables and FDI willingness.

Figure 5-2 Research methods



5.3 Research analysis results

5.3.1 Descriptive analysis

5.3.1.1 Basic descriptive and statistical analysis

This study was conducted from January 20, 2018, to April 10, 2018. 650 questionnaires were randomly distributed to foreign-invested enterprises registered in the administrative department of industry and commerce in Henan Province. After nearly three months of interviews, online electronically pushes, 525 questionnaires were retrieved. After reviewing and eliminating 324 incomplete and incorrect information questionnaires⁶³, there were 201 valid questionnaires, and thus, the effective return rate was 30.92%. See Table 5-5 for details.

⁶³ These invalid questionnaires have some problems, such as missing items, not finished in the end, obvious wrong information, incomplete answers, untrue data, large-scale answers with the same options, and so on, which were deleted finally.

Table 5-5 Questionnaire recovery summary table

Distribute the questionnaire	Collect the questionnaire	Number of invalid questionnaires	Number of valid questionnaires	Effective recovery rate
650	525	324	201	30.92%

According to the Central Limit Theorem, a group of samples (n) is extracted from a parent body, and its average is calculated. When (n) is very large (usually n is greater than 30), the average of the sample will tend to the normal distribution (Chen 2004). The number of recovering rate in this research questionnaire has reached this requirement. Therefore, before analyzing the results, it will be assumed that the samples of this research questionnaire are normally distributed to facilitate the work of other statistical analysis.

5.3.1.2 Basic data analysis of respondents

It can be seen from Table 5-6 that the respondents in the questionnaires collected in this study are mostly chairman, accounting for 27.9%. The number of general managers is also as high as 22.4% and the total number of respondents with the manager positions and above is 52.8%. These people are more involved in the company's investment and operating strategy. Therefore, they have a certain degree of credibility in terms of investment, and the information from them is more reliable. As for the investment region, investment in the Central city belt is the majority, reaching 52.2% of all samples, those in the northern and southern account for 9.0% and 38.8%, respectively, which is consistent with the distribution of FDI discussed in the previous chapter.

Table 5-6 Basic information of respondents

Basic information		Frequency	Percentage
Job title	Chairman	56	27.9%
	General manager	45	22.4%
	Deputy manager	5	2.5%
	Secretary	41	20.4%
	Department manager	8	4.0%
	Other	46	22.9%
Investment region	Central city belt	115	52.2%
	Northern Henan	18	9.0%
	Southern Henan	78	38.8%
Investment period	Less than 3 years	15	7.5%
	4-6 years	31	15.4%
	7-9years	27	13.4%
	More than 10years	128	63.7%
Industry category	Agriculture, forestry and animal	13	6.5%
	Mining	8	4.0%
	Food and Beverage	24	11.9%
	Textile	18	9.0%
	Chemics	15	7.5%
	Plastic	8	4.0%
	Metal	9	4.5%
	Machine equipment	23	11.4%
	Housing and Construction	8	4.0%
	Conveyance	2	1.0%
	Other manufacturing industries	39	19.4%
	Information service	2	1.0%
	Communication	14	7.0%
	Wholesale and retail	1	0.5%
	Logistics	6	3.0%
	Catering	2	1.0%
	Entertainment	1	0.5%
	Tourism	8	4.0%
	Trade	13	6.5%
	Finance	8	4.0%
Other services	24	11.9%	
Enterprise registered capital	10 million (CHY) or less	57	28.4%
	10 - 30 million (CHY)	51	25.4%
	More than 30 million (CHY)	93	46.3%
Number of employees	1-100	60	29.9%
	101-400	70	34.8%
	More than 401	71	35.3%
Cultural background	With Chinese background	115	57.21%
	Without Chinese background	86	42.79%

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Enterprise operation mode	Wholly foreign-owned	118	58.7%
	Sino-foreign joint ventures	72	35.8%
	Sino-foreign cooperative	9	4.5%
	Other	2	1.0%

Note: Shadow is the second industry. The purpose of shadowing is to facilitate the analysis in this paper.

In the enterprise types of the respondents, the company has a maximum number of years in the past more than 10 years, accounting for 63.7%, followed by the company with 4 to 6 years, accounting for 15.4%, indicating that the company's development is mature and has a considerable scale. Manufacture companies accounted for the majority, which accounted for 54.1% of the total samples. In the enterprise's registration capital, there are companies more than 30 million (CHY) accounting for 46.3%, followed by companies with less than 10 million (CHY) accounting for 28.4%, and companies with 10-30 million (CHY) accounting for 25.4%. In the number of employees of the company, companies with less than 100 people accounted for 29.9% of the total samples, followed by the companies with more than 500 people, accounting for 25.4%, which shows that the scale of enterprises that invest in Henan are mostly large. In the enterprise's operation mode, it is dominated by wholly foreign owned, accounting for 58.7% of the total samples, followed by the Sino-foreign joint ventures and then Sino-foreign cooperative mode.

5.3.2 Descriptive statistical analysis of investment factors

This part will provide a basic descriptive statistical analysis based on the respondents' responses to the impacts of variables on FDI. In the cognition of the importance of 26 variables, the average distribution of scores is mostly between important and very important (the average varies between 3 and 5), which shows that the company believes that there is the certain importance to most variables.

As can be seen from Table 5-7, among the variables affecting FDI, the top five variables are "Local land cost"(average 4.09), followed by "Local road transportation", "Local export quotas" and "Local water and power supply" and "Local communication facilities", this result is very similar to most of the relevant research results (Chen 1996; Dunning 2004; Sun, Tong and Yu 2002), that is, infrastructure, land cost, and agglomeration are still the most essential factors in FDI. It is followed by factors such as "local wage," and "government service," "transport costs." From these variables, it can be seen that the most critical aspects of corporate investment are cost, government, and infrastructure.

Table 5-7 Descriptive Statistics

Variables	N	Mini mum	Maxi mum	Mean	Std. Deviation
Local land cost	201	1	5	4.09	.988
Local road transportation is convenient or not	201	1	5	4.02	.889
Local export quotas	201	2	5	3.97	.997
Local water and power supply	201	2	5	3.97	.643
Local communication facilities	201	2	5	3.93	.846
High industry concentration (industrial park)	201	2	5	3.93	.803
Local air transportation is convenient or not	201	2	5	3.93	.846
Local quality of labor	201	1	5	3.91	.807
The same types of manufacturers in the region.	201	2	5	3.89	.754
Local wage	201	1	5	3.87	1.012
Support industry and related industry chain	201	2	5	3.86	.807
Local transport costs	201	1	5	3.84	.958
Local government service quality and sincerity	201	1	5	3.82	.853
Local supply of labor force	201	2	5	3.82	.829
Local supply of raw materials	201	1	5	3.82	.837
Local social stability	201	1	5	3.81	1.046
Local railway transportation is convenient or not	201	1	5	3.79	.875
Establishment and operation of local related units for infrastructure service	201	1	5	3.78	.867
Size of the economy	201	1	5	3.75	1.020
Local export competitiveness	201	1	5	3.73	1.025
Consists of local government policy	201	1	5	3.71	1.095
Local market openness	201	1	5	3.69	1.107
Local government incentives	201	1	5	3.68	.882
Average income of local residents	201	2	5	3.68	.905
Growth of the gross national product	201	2	5	3.55	.969
Local financing	201	1	5	2.95	.934

5.3.3 Comparative analysis of influencing factors in different regions

In this part, the influencing factors of various regions in Henan Province will be evaluated by the individual perception of the respondents. After a preliminary analysis of the questionnaire, the respondents' perceptions in North Henan, South Henan, and Central city belt⁶⁴ were used to evaluate the influencing FDI factors in terms of the political and economic environment, openness, factors of production, cost, and infrastructure.

As can be seen from Table 5-8, respondents believe that the most important factors in the

⁶⁴ In the third chapter, Henan is divided into three regions, namely the central city belt economic zone, the northern economic zone, and the southern economic zone. For the sake of convenience, in this chapter, it is referred to as the Central City Belt, South Henan, and the North Henan.

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central city belt are the cost and infrastructure, while other factors are relatively less important; the companies in northern Henan are more concerned with infrastructure and cost; the people in southern Henan region are more concerned with politic and cost. Comparing the three regions has significant differences in the perception of the importance of different factors. The political environment, economic environment, the factors of production, and cost are more important for the southern Henan region; openness is more important for the central city belt. Politics, economics, factors of production, cost, and infrastructure are relatively less important to the central city belt. Openness is not so important for southern Henan.

Table 5-8 Influencing Factors of FDI in different regions

Regions	Central City Belt (105)		North Henan (18)		South Henan (78)		Summary Most Important /Least Important
	Mean	Ranking	Mean	Ranking	Mean	Ranking	
Political environment	3.7238	4	3.4028	6	3.8782	2	S/C
Economic environment	3.6540	6	3.4259	5	3.7137	6	S/C
Openness	3.8286	3	3.6481	4	3.7821	4	C/S
Factors of production	3.7237	5	3.6667	3	3.7766	5	S/C
Cost	3.9333	1	3.7963	2	3.9658	1	S/C
Infrastructure	3.9063	2	3.9815	1	3.8803	3	N/C

Note: The results in the table use the average of all items for the corresponding factors. In the sixth column, the first letter of the region is used to refer to each region.

5.3.4 Factor analysis

5.3.4.1 Analysis process

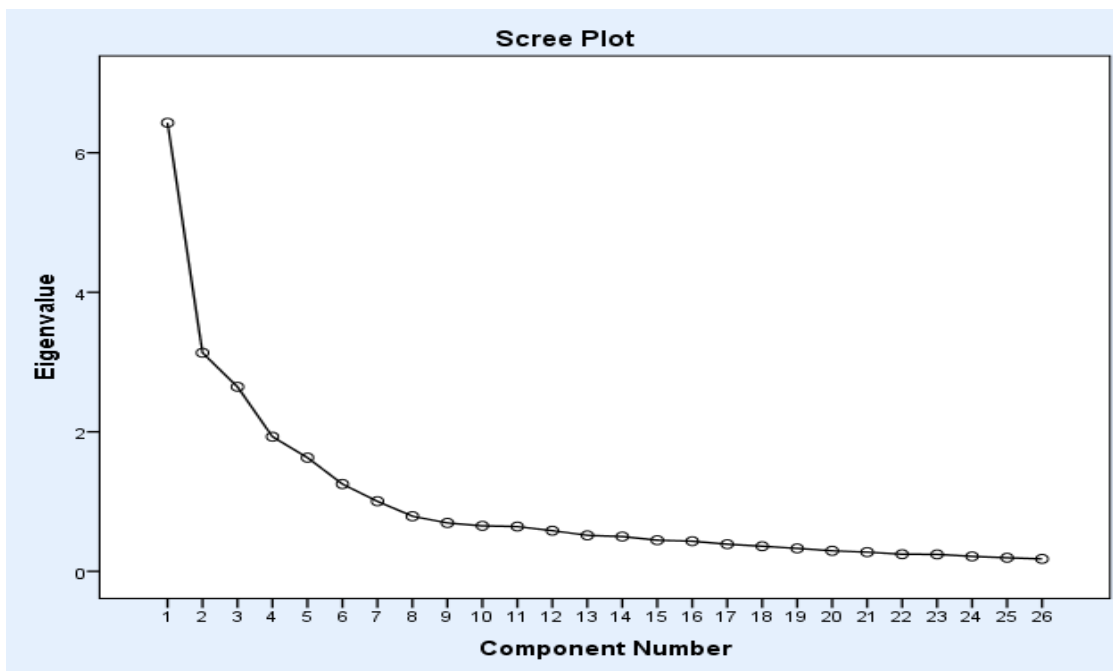
This part conducts the factor analysis of 26 variables to understand the factors that enterprises value in their investments. Before conducting the factor analysis, the first test of the MSA (Measure of Sampling Adequacy) proposed by Kaisha is carried out. The purpose is to verify the suitability of the data for factor analysis. It is an indicator of how much the partial correlation between the variables and the extracted common factor is less than the correlation between the original variables. According to empirical experience, when the MSA value is greater than 0.7, it indicates that the factor analysis is appropriate (Chen 2004). Table 5-9 shows that the MSA value of this study is $0.820 > 0.7$, so the data is suitable for factor analysis. After factor analysis, there are seven factors whose eigenvalues are greater than 1. The total cumulative explanatory variation is 69.32%, and the

scree plot is shown in Figure 5-3.

Table 5-9 Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	
1	6.430	24.732	24.732	6.430	24.732	24.732	
2	3.133	12.049	36.781	3.133	12.049	36.781	
3	2.645	10.171	46.953	2.645	10.171	46.953	
4	1.930	7.424	54.376	1.930	7.424	54.376	
5	1.629	6.267	60.643	1.629	6.267	60.643	
6	1.251	4.813	65.457	1.251	4.813	65.457	
7	1.005	3.864	69.320	1.005	3.864	69.320	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.					0.820		

Figure 5-3 Scree Plot



5.3.4.2 Factor analysis result

The principal component factor analysis method will be used, and the number of factors was selected according to the Kaiser principle to retain the factors whose eigenvalue are greater than 1. Therefore, as shown in Table 5-10, seven factors are selected, and then orthogonal rotation is performed by the maximum variation method (Varimax) so that the factor loading can be more clearly classified into various factors and reach the purpose that there is no correlation between the

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Table 5-10 List of investment factors and variables

Factors and variables	Eigenvalues	Cumulative interpretation of variance %	Factor loading value
【Factor 1】	6.430	24.732	
Local supply of labor force			0.811
Local quality of labor			0.784
High industry concentration (industrial park)			0.774
Local supply of raw materials			0.747
The same types of manufacturers in the region.			0.709
Support industry and related industry chain			0.662
【Factor 2】	3.133	36.781	
Local government service quality and sincerity			0.833
Local government incentives			0.784
Local social stability			0.731
Consists of local government policy			0.589
Local financing			0.532
【Factor 3】	2.645	46.953	
Size of the economy			0.835
Average income of local residents			0.812
Growth of the gross national product			0.731
【Factor 4】	1.930	54.376	
Local export quotas			0.863
Local export competitiveness			0.843
Local market openness			0.832
【Factor 5】	1.629	60.643	
Local wage			0.838
Local transport costs			0.834
Local land cost			0.821
【Factor 6】	1.251	65.457	
Local road transportation is convenient or not			0.862
Local air transportation is convenient or not			0.816
Local railway transportation is convenient or not			0.593
【Factor 7】	1.005	69.320	
Local communication facilities			0.845
Establishment and operation of local related units for infrastructure service			0.751
Local water and power supply, quality and price			0.613

factors, and finally it is named based on the meaning and the factor loading. After the analysis of the data, the total cumulative explanatory variation is 69.32%, and the total of the seven factors in the

26 variables was summarized as shown in Table 5-10.

5.3.4.3 Name the factors

After the factor analysis is performed and the variables are categorized into factors, they are named according to the factors to which they are classified:

- I. **[Factor 1: Factors of production]** This factor has six factors of production variables, including: “locally the same type of manufacturer”, “local supply of labor”, “local quality of labor force”, “local supply of raw materials”, “local supportive industries and supply chains” and “high industrial concentration (industrial park)”. It is therefore named as the factors of production.
- II. **[Factor 2: Political Factor]** This factor has five political environment variables, including “local government service quality and sincerity,” “local government incentives,” “local social stability,” “consists of local government policy,” “local financing.” In China, financing is often accompanied by incentives of the government. It is therefore named as the political factor.
- III. **[Factor 3: Economic factor]** This factor has three economic variables, including: “economic scale,” “gross national product growth,” and “the average income of local residents.” It is therefore named as Economic factors.
- IV. **[Factor 4: Openness Factor]** This factor has three openness variables, including “local export competitiveness,” “local export quotas” and “local market openness.” It is therefore named as the openness factor.
- V. **[Factor 5: Cost factor]** This factor has three variables, including “local land cost,” “local wage,” and “transport cos.” It is, therefore, named as the cost factor.
- VI. **[Factor 6: Transportal infrastructure Factor]** This factor has three infrastructure variables, including “local railway transport,” “local road transport” and “local air transport.” It is therefore named as the transport infrastructure factor.
- VII. **[Factor 7: Infrastructure Factor]** This factor has three infrastructure variables, including “local water and power supply, quality,” “local communication facilities” and “establishment and operation of local related units for infrastructure service.” It is therefore named as the general infrastructure factor.

5.3.4.4 Comparison of factor analysis results with theoretical results

In the literature review section, the main factors that influence investment are the political environment, economic environment, cost, openness, infrastructure, and factors of production. After the factor analysis, this study has obtained 7 common factors, except that the infrastructure is divided into two parts, and the analyzed results are very close to the theoretical classification. These slight differences may be affected by the perceived level of interviews.

5.3.5 Cluster analysis

5.3.5.1 Analysis process

In order to explore the importance that different enterprises attach to each factor, this part will use the factor score of the seven factors obtained from the analysis results of the above factors as the cluster variables to divide the survey samples into clusters. This study used the two-stage clustering method. Firstly, the Euclidean distance is used in the cluster analysis and analyzed by the ward minimum variance method in the hierarchical clustering method, and the optimal number of clusters is determined by Ward's cluster analysis tree diagram (See Figure5-4). Then, the obtained cluster number is taken as the starting value of the K-Means method in the non-hierarchical clustering method, and the final clustering result is obtained.

Therefore, as shown in Figure 5-4 below, 201 data cases could be divided into three groups according to the distance of 20, and cluster number 3 should be taken as the starting value of K-Means method. Finally, 70 samples of cluster 1, 64 samples of cluster 2, and 67 samples of cluster 3 can be obtained. In order to see the cognitive gap of the three clusters in each factor, the average of the three clusters in the seven factors is plotted in the following Figure5-5. It can be seen that cluster 1 has the highest average value of cost factors. Therefore, cluster 1 is named as “cost factor-oriented” cluster; cluster 2 focus on Cost and general infrastructure, so it is named as “Cost and general infrastructure oriented” cluster. Clusters 3 emphasize Transport infrastructure, so it is named “transport infrastructure oriented” clusters. (See Table 5-11)

Figure 5-4 Wald cluster analysis tree diagram

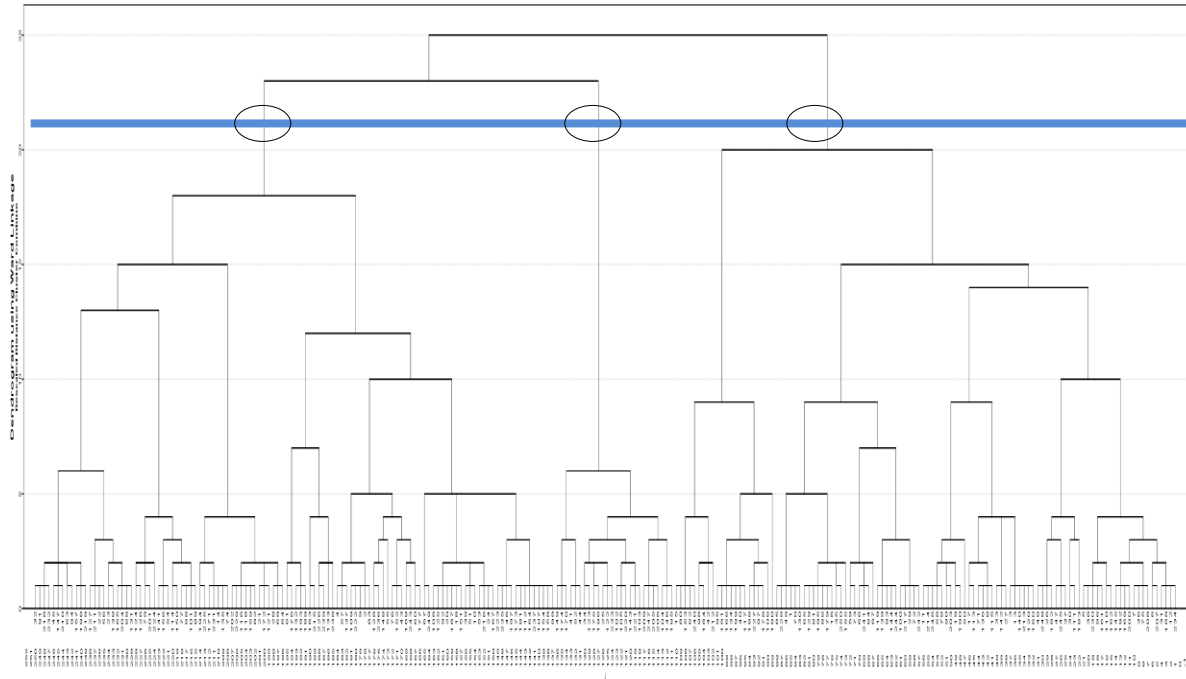
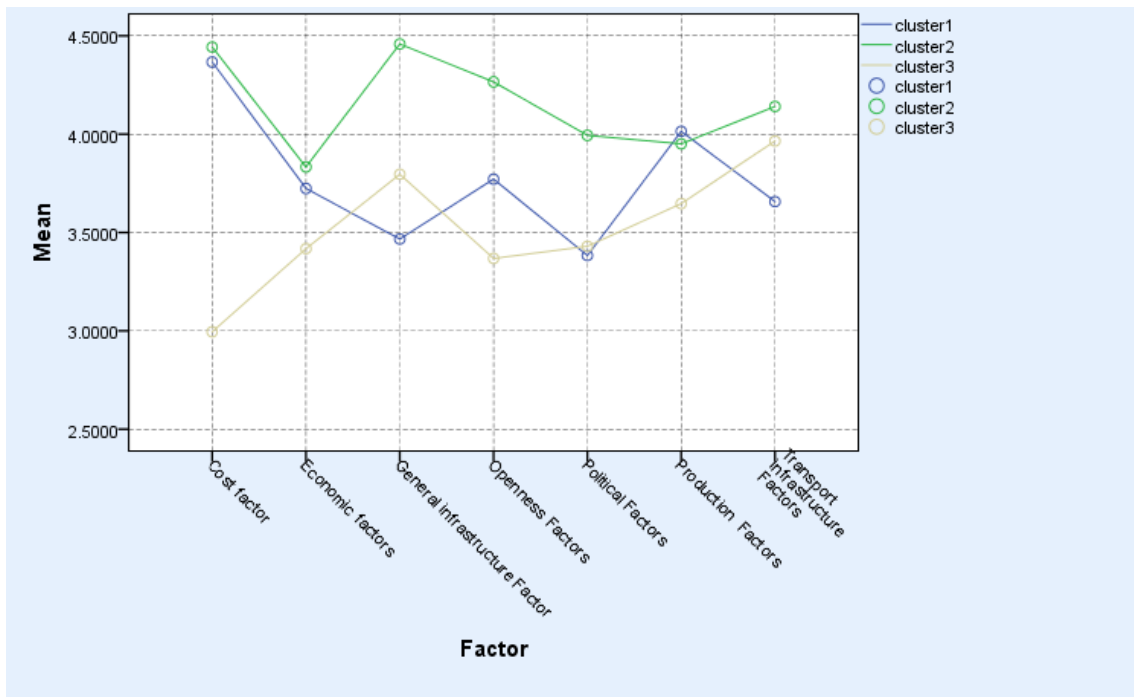


Table 5-11 The average value of clusters on each factor

Factors	Cluster1	Cluster2	Cluster3
	Cost factor-oriented (70)	Cost and general infrastructure -oriented (64)	Transport, infrastructure-oriented (67)
Political Factors	3.3829	3.9938	3.4299
Economic factors	3.7238	3.8333	3.4179
Openness Factors	3.7714	4.2656	3.3682
Production Factors	4.0143	3.9505	3.6468
Cost factor	4.3667	4.4427	2.9950
Transport infrastructure Factors	3.6571	4.1406	3.9652
General infrastructure Factor	3.4667	4.4583	3.7960

Note: Higher scores are marked with shadows.

Figure 5-5 Average Value of Cluster Factor



5.3.5.2 Cluster characteristics

According to the Table 5-12 below, the companies with less than 5 million and 5-30 million (CHY) investments are the most in cluster 1, which shows that all small-sized and medium-sized companies pay more attention to the cost factor in investment considerations. Cluster 2 is dominated by medium-sized and over 100 million large-sized enterprises, which indicate this type of enterprises, attach more importance to the cost and general infrastructure in terms of investment considerations. Cluster 3 is dominated by 5-30 million (CHY) enterprises, indicating that the cluster belongs to the medium-sized enterprises, paying more attention to transport infrastructure.

Table 5-12 Investment capital distribution in clusters

	Cluster1	Cluster2	Cluster3
Cluster sample size	70	64	67
Cluster characteristics	Cost factor-oriented	Cost and general infrastructure-Oriented	Transport infrastructure -Oriented
5 million (CHY) or less	25	8	13
5-30 million (CHY)	19	20	24
30-55 million (CHY)	9	10	10
55-80 million (CHY)	2	5	4
80-100 million (CHY)	4	1	1
More than 100 million(CHY)	11	20	15

Note: In each category, the large number of companies is shaded.

5.3.6 Variance analysis

5.3.6.1 Analysis of the differences of clusters on FDI factors.(ANOVA verification)

In this part, the study use variance analysis to examine the differences among the seven factors, that is, through ANOVA test, to verify the hypothesis *H7: Clusters that are valued by different factors will have significant differences in cognitive considerations for each factor*. If there is any difference, then Duncan's post-test⁶⁵ is used to verify the difference. The value of the analysis of variance is obtained by taking the average of the total fractions of the variables contained in each factor.

It can be seen from Table 5-13 that the three clusters have significant differences in the individual effects of the seven factors. Therefore, there is a significant difference in the cognitive level of the importance of the seven factors among the three clusters. That is, hypothesis *H7: Clusters that are valued by different factors will have significant differences in cognitive considerations for each factor* is established. In order to further understand the differences between clusters, the post-Hoc comparisons of the Duncan test will be carried out for each cluster. Seven factors are discussed as follows:

⁶⁵ It belongs to multiple comparisons, which refers to the hypothesis test of whether there is significant difference between the averages of each sample after variance analysis. The analysis of variance can only judge whether there are differences among the total averages. Multiple comparisons can be used to further determine which two averages are different and which two averages are not different.

Table 5-13 ANOVA table of clusters to various FDI factors

Factor	Average of cluster			Verification Result		
	Cluster1 (70)	Cluster2 (64)	Cluster3 (67)	F-test	P-value	Duncan
Political Factors	3.3829	3.9938	3.4299	16.818	0.000	(1,3),2
Economic factors	3.7238	3.8333	3.4179	4.605	0.011	3,(1,2)
Openness Factors	3.7714	4.2656	3.3682	17.892	0.000	3,1,2
Factors of production	4.0143	3.9505	3.6468	7.249	0.001	3,(2,1)
Cost factor	4.3667	4.4427	2.9950	144.440	0.000	3,(1,2)
Transport infrastructure Factors	3.6571	4.1406	3.9652	8.258	0.000	1,(3,2)
General infrastructure	3.4667	4.4583	3.7960	66.686	0.000	1,3,2

Note: 1. Shading indicates the p-value <0.05 with significant differences.

2. In the Duncan test, 1 stand for cluster 1, 2 stands for cluster 2, 3 stands for cluster 3. There is no significant difference between the clusters in the brackets, and clusters not in brackets indicate significant differences with other clusters. Cluster in the latter place more emphasizes the corresponding factor.

I. Political factor: According to Duncan's post-test, cluster 2's emphasis on “political factors” is significantly higher than cluster 3 and cluster 1, while cluster 3 has more emphasis on political factors than cluster 2. However, there is no significant difference between cluster3 and cluster1.

II. Economic factors: In the perception of “economic factors,” cluster 1 and cluster 2 is significantly higher than clusters 3; cluster 2 is also higher than cluster 1, but there is no significant difference between cluster2 and cluster1.

III. Openness factors: In the perception of “openness factors,” cluster 2 is significantly higher than clusters 1 and 3; cluster 1 is also significantly higher than cluster 3.

IV. Factors of production: In the perception of “factors of production,” cluster 1 and cluster2 are significantly higher than clusters 3; cluster 1 is also higher than cluster 2, but there is no significant difference between cluster1 and cluster2.

V. Cost factors: In the perception of “cost factor,” cluster 2 and cluster1 are significantly higher than clusters 3; cluster 2 is also higher than cluster 1, but there is no significant difference between cluster2 and cluster1.

VI. Transport infrastructure factor: In the perception of “Transport infrastructure factor,” cluster2 and cluster3 are significantly higher than cluster1; cluster 2 is also higher than cluster 3, but there is no significant difference between cluster2 and cluster3.

VII. **General infrastructure factor:** In the perception of “general infrastructure factor,” cluster2 is significantly higher than cluster3; cluster 3 is also significantly higher than cluster 1.

5.3.6.2 Analysis of the differences of enterprises characteristics on FDI factors.

This part is mainly for the hypothesis of this study, *H8: Different enterprises characteristics will have significant differences in cognitive considerations for each FDI factor.* In terms of the characteristics of the enterprise, the variables such as investment period, investment capital, and the total number of employees are adopted.

I. Analysis of the difference of enterprise size to various FDI factors

In this part of the study, the size of the enterprises will be measured by the amount of FDI inflow and the “total number of employees.” First, in terms of “the amount of FDI inflow,” Table 5-14 shows the difference in investment considerations of factors among different FDI capital amounts. Different investment capital has significant differences in political factors. Enterprises with capital investments ranging from 10 million to 30 million and greater than 30 million more emphasized political factors than the enterprises with less than 10 million. There is no significant difference between medium-sized enterprises with 10-30 million-capital investment and large-sized companies with more than 30 million capital investment. It can be seen that large and medium-sized enterprises have more consideration on politics factor. It is because large and medium-sized enterprises have enough funds and strength to have more voice in government policy negotiations. Moreover, the government is also more inclined to commit more preferential policies to companies with higher investment to achieve a win-win situation. Other factors did not show significant differences among different investment capital.

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Table 5-14 ANOVA table of the investment amount of enterprises to various FDI factors

Factor	Amount of FDI			Verification Result		
	<10 ^①	10-30 ^②	>30 ^③	F-test	P-value	Duncan
	Million CHY (57)	Million CHY(51)	Million CHY(93)			
Political Factors	3.2316	3.6471	3.7849	11.691	0.000	1,(2,3)
Economic factors	3.5497	3.6667	3.7168	0.718	0.489	NA
Openness Factors	3.6608	3.7320	3.9104	1.435	0.241	NA
Factors of production	3.8070	3.9248	3.8817	0.510	0.601	NA
Cost factor	3.8713	3.9346	3.9713	0.234	0.791	NA
Transport infrastructure	3.8830	3.9412	3.9176	0.088	0.916	NA
General infrastructure Factor	3.7719	3.8824	3.9713	1.692	0.187	NA

Note: 1.Shading indicates the p-value <0.05 with significant differences.

2. In the Duncan test, 1 stands for enterprise ①, 2 stands for enterprise②, 3 stands for enterprise③. There is no significant difference between the enterprises in the brackets, and enterprises not in brackets indicate significant differences with other enterprises. Enterprises in the latter place more emphasize the corresponding factor.

3. Number represents the Companies in the corresponding category.

Table 5-15 ANOVA table of investment employees of enterprises to various investment factors

Factor	Employees of FDI enterprises			Verification Result		
	<100 ^①	201-400 ^②	>401 ^③	F-test	P-value	Duncan
	(60)	(70)	(71)			
Political Factors	3.3900	3.6086	3.7493	4.176	0.017	1,(2,3)
Economic factors	3.5444	3.6857	3.7230	0.815	0.444	NA
Openness Factors	3.7056	3.7381	3.9249	1.104	0.333	NA
Factors of production	3.7778	4.0000	3.8239	2.449	0.089	NA
Cost factor	4.0000	3.9476	3.8638	0.415	0.661	NA
Transport infrastructure	3.8889	3.9476	3.9014	0.121	0.886	NA
General infrastructure	3.8389	3.9000	3.9296	0.324	0.724	NA

Note: 1.Shading indicates the p-value <0.05 with significant differences.

2.In the Duncan test, 1 stands for enterprise ①, 2 stands for enterprise②, 3 stands for enterprise③. There is no significant difference between the enterprises in the brackets, and enterprises not in brackets indicate significant differences with other enterprises. Enterprises in the latter place more emphasize the corresponding factor.

3. The number represents the Companies in the corresponding category.

Different numbers of employee enterprises have significant differences in political factor. As can be seen from Table 5-15, companies with more employees pay more attention to political factor also. Big companies can solve the local employment problems and thus undoubtedly have more bargaining ability in negotiations with the government. So the hypotheses of this study *H8-1: Enterprises size will have significant differences in FDI factors* are partially tenable.

II. Analysis of the difference of enterprise investment period to various FDI factors

Table 5-16 shows the difference in investment considerations of factors among different investment period. In terms of political factors and transport infrastructure, different investment periods have significant differences among factors. Companies with establishment more than 4 years more value political factors significantly higher than companies with investment for less than 3 years. Companies with the establishment for more than 4 years more take highly of transport infrastructure and are significantly higher than companies with the investment of fewer than 3 years. There is no significant difference between the enterprise for more than 4 years. With the development of China's domestic infrastructure in recent years, the infrastructure of Henan has no particularly significant difference compared with other regions.

Table 5-16 ANOVA table of enterprise investment period to various FDI factors

Factor	Establishment of FDI enterprises				F-test	P-value	Verification Result
	<3 ^① years (15)	4-6 ^② years (31)	7-9 ^③ years (27)	>10 years (128) ^④			
Political Factors	3.1200	3.6516	3.5111	3.6516	2.674	0.049	1,(3,4,2)
Economic factors	3.5333	3.7097	3.8148	3.6250	0.537	0.658	NA
Openness Factors	3.4889	3.9032	3.9259	3.7760	0.878	0.453	NA
Production Factors	3.8111	3.8011	4.0247	3.8633	0.740	0.530	NA
Cost factor	3.7778	3.9032	3.9877	3.9479	0.219	0.883	NA
Transport infrastructure	3.2000	4.0645	4.1235	3.9167	6.562	0.000	1,(4,2,3)
General infrastructure	3.6667	4.1075	3.8765	3.8698	1.825	0.144	NA

Note: 1. Shading indicates the p-value <0.05 with significant differences.

2. In the Duncan test, 1 stands for enterprise ^①, 2 stands for enterprise^②, 3 stands for enterprise^③. 4 stands for enterprise^④ There is no significant difference between the enterprises in the brackets, and enterprises not in brackets indicate significant differences with other enterprises. Enterprises in the latter place more emphasize the corresponding factor.

3. The number represents the Companies in the corresponding category.

Moreover, the first thing to be considered for the old company when investing is transportation, which is also confirmed in the previous descriptive analysis. However, there are no significant differences in other factors. The requirements for political factors and transport infrastructure between the old companies and the new companies are different. In the past, the government has given considerable favorable policy support in order to attract more FDI. Therefore, the hypothesis of this study *H8-2: The investment period of enterprises has significant differences in FDI factors* is

partially established.

5.3.6.3 Analysis of the differences of enterprises characteristics on FDI.

I. Analysis of the industry of enterprises on FDI

In the previous chapter panel data analysis, the study focused on the impact of industrial structure on FDI. From the individual enterprises' perspective, it is more meaningful to discuss the degree of investment satisfaction of the investors in different industries and whether to invest in the future. Table 5-17 shows the difference between industries among FDI variables. Enterprises with different industries have significant differences in terms of additional investment. Companies in the primary and tertiary industries are more inclined to add investment and are significantly higher than companies in the secondary industry. There is no significant difference between enterprises in primary and secondary industry. In terms of investment satisfaction, there is no significant difference between companies in the three industries. It is a step closer to our previous analysis of panel data. The results show that for a long time, the primary and second industry has competitive advantages, so they have positive effects on FDI, while the tertiary industry has a negative effect. Henan is a large agricultural province, and its primary industry is its historical and traditional advantageous industries. With the upgrading of Henan's industry and preparations for entering the next economic stage, the primary and tertiary industries show relatively large investment desire in the future, while the secondary industry begins to retreat. Therefore, the hypothesis of this study *H9-1: The industry of enterprises has significant differences in FDI is partially established*

Table 5-17 ANOVA table of the difference of industry on FDI

FDI	The industry of FDI enterprises			Verification Result		
	Primary industry① (17)	Second industry② (151)	Tertiary industry③ (33)	F-test	P-value	Duncan
Y1:Investment satisfaction	4.18	3.58	3.79	2.827	0.062	NA
Y2:Additional investment	4.24	3.59	3.79	3.129	0.046	2,(3,1)

Note: 1.Shading indicates the p-value <0.05 with significant differences.

2. In the Duncan test, 1 stands for enterprise ①, 2 stands for enterprise②, 3 stands for enterprise③. There is no significant difference between the enterprises in the brackets, and enterprises not in brackets indicate significant differences with other enterprises. Enterprises in the latter place more emphasize the corresponding factor.

3. The number represents the Companies in the corresponding category.

II. Analysis of cultural proximity of enterprises on FDI

Table 5-18 shows that enterprises with Chinese background have significant differences in terms of investment. Companies with the Chinese background are more satisfied with the investment and are significantly higher than companies with no Chinese background. In terms of additional investment, there is no significant difference between companies. It is because in the previous investment, having a Chinese background is a very important place in deciding whether to invest or not. However, with the deepening of local investment, this gap will gradually decrease, until there is no significant difference in the decision to add investment in the future. Therefore, the hypothesis of this study *H9-2: Companies with Chinese cultural background and other companies with no Chinese cultural background have significant differences on FDI* is partially established.

Table 5-18 ANOVA table of cultural proximity of enterprises on FDI

FDI	Cultural proximity		Verification Result		
	Chinese background① (115)	No Chinese background② (86)	F-test	P-value	Duncan
Y1: Investment satisfaction	3.81	3.47	5.371	0.021	2,1
Y2: Additional investment	3.75	3.58	1.218	0.271	NA

Note: 1. Shading indicates the p-value <0.05 with significant differences.

2. In the Duncan test, 1 stands for enterprise ①, 2 stands for enterprise②. There is no significant difference between the enterprises in the brackets, and enterprises not in brackets indicate significant differences with other enterprises. Enterprises in the latter place more emphasize the corresponding factor.

3. The number represents the Companies in the corresponding category.

5.3.7 SEM analysis

After the analysis in the previous part of this chapter, it can be used as reference and improvement for the relevant government units in the regional planning. The main factor affecting the willingness of foreign enterprises to invest is also what the study wants to know, that is, it should be figured out that the regional reasons why the respondents are dissatisfied with the investment environment and affect their investment. The relevant units can target to strengthen and improve it. Therefore, the following will analyze and verify the causal relationship between the various regional factors and FDI.

5.3.7.1 Descriptive statistics

The study makes descriptive statistics on the variables in the questionnaire, which mainly

contains information such as mean, standard deviation, skewness, and kurtosis, to judge the basic level of the variables in the scale and the distribution of the data.

It can be seen from the above Table 5-19 that the statistical analysis results of the data in the questionnaire, containing the number of cases, the minimum, the maximum, the mean, standard deviation, skewness, and kurtosis, are used to verify whether the data obtained from the survey obey the normal distribution. Whether the data obey normal distribution will have a vital impact on the follow-up analysis. Kline (2005) believed that when the absolute value of skewness is less than 3, and the absolute value of kurtosis is less than 10, the samples obey normal distribution. The results in the table show that the absolute skewness of variables is less than 3, and the results of absolute kurtosis are less than 10. The skewness and kurtosis satisfy the condition of the normal distribution, which shows that variables obey normal distribution. The data can be directly used for statistical analysis, such as reliability and validity.

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Table 5-19 Descriptive statistics of the variables

Variables	N	Mini mum	Maxi mum	Mean	Std. Deviation	Skewness	Kurtosis
Local social stability	201	1	5	3.81	1.046	-.541	-.764
Local government incentives	201	1	5	3.68	.882	-.301	.045
Local government service quality and sincerity	201	1	5	3.82	.853	-.379	-.182
Consists of local government policy	201	1	5	3.71	1.095	-.319	-.684
Average income of local residents	201	2	5	3.68	.905	-.212	-.718
Size of the economy	201	1	5	3.75	1.020	-.330	-.544
Growth of the gross national product	201	2	5	3.55	.969	.082	-.987
Local market openness	201	1	5	3.69	1.107	-.281	-1.089
Local export quotas	201	2	5	3.97	.997	-.511	-.898
Local export competitiveness	201	1	5	3.73	1.025	-.500	-.404
Local financing	201	1	5	2.95	.934	.593	-.032
Local supply of raw materials	201	1	5	3.82	.837	-.416	-.039
Local supply of labor force	201	2	5	3.82	.829	-.132	-.708
Local quality of labor	201	1	5	3.91	.807	-.468	.157
The same types of manufacturers	201	2	5	3.89	.754	-.241	-.317
Support industry and related industry chain	201	2	5	3.86	.807	-.261	-.468
High industry concentration(industrial park)	201	2	5	3.93	.803	-.282	-.543
Local land cost	201	1	5	4.09	.988	-.820	-.159
Local wage	201	1	5	3.87	1.012	-.498	-.494
Local transport costs	201	1	5	3.84	.958	-.492	-.362
Local water and power supply, quality and price	201	2	5	3.97	.643	-.196	.113
Local communication facilities	201	2	5	3.93	.846	-.117	-1.072
Establishment and operation of local related units for infrastructure service	201	1	5	3.78	.867	-.350	-.268
Local railway transportation is convenient or not	201	1	5	3.79	.875	-.347	-.316
Local road transportation is convenient or not	201	1	5	4.02	.889	-.903	.918
Local air transportation is convenient or not	201	2	5	3.93	.846	-.418	-.447
Investment satisfaction	201	1	5	3.66	1.051	-.356	-.654
Additional investment	201	1	5	3.68	1.058	-.268	-.939

5.3.7.2 Reliability analysis

Reliability analysis is to ensure the validity of model fitting evaluation and hypothesis testing.

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Cronbach's Alpha reliability coefficient is generally used to check the consistency of the variables. Hair, Black, Babin, Anderson and Tatham (2006) and DeVellis (2016) believed that the Cronbach's Alpha coefficient must be greater than 0.7 for variables to have excellent reliability. Table 5-20 shows that the reliability values of the economic environment, cost, infrastructure, factors of production and FDI are all above 0.8, while the reliability values of the political environment are above 0.7, which shows that the reliability of each aspect of this study has a certain level and internal consistency. In terms of the political environment and factors of production, the deletion of the “consists of local government policy” and “local financing” can improve the reliability of the questionnaire, so both of them are deleted.

5.3.7.1 Validity analysis

For the questionnaire, it is usually measured using content validity and structural validity. Content validity refers to the suitability and logical consistency between the variables and the tested variables (Juan and Yan 2006). The questionnaire used in this study is based on the literature review to show that the relationship between variables is constructed, and the wording and expression of the variables are further revised and improved according to the results of the pre-survey so that the scale can be considered to have the content validity. The focus of this study is the structural validity, which refers to the ability of variables to measure the factors (Li and Miaomiao 2009). The study uses the collected data to conduct exploratory factor analysis (EFA) test to prove structural validity. In general, principal component analysis with factor extraction is used to test convergence and discriminant validity. First, exploratory factor analysis needs to satisfy two conditions (Heim and Field 2007): 1, $KMO > 0.7$; 2, Bartlett's spherical test is significant ($Sig. < 0.005$). SPSS22.0 was used for exploratory factor analysis. KMO and Bartlett's spherical test was performed with the scale, and the result is as follows (See Table 5-21):

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Table 5-20 Reliability analysis

Factors	Factor items	Initial Cronbach's Alpha	Alpha if deleted	Final Cronbach's Alpha
Political environment	1. Local social stability	0.780	0.737	0.787
	2. Local government incentives		0.692	(Delete
	3. Local government service quality and sincerity		0.696	the fourth
	4. Consists of local government policy		0.787	factor)
Economic environment	5. Average income of local residents	0.824	0.785	0.824
	6. Size of the economy		0.670	
	7. Growth of the gross national product		0.802	
Openness	8. Local market openness	0.869	0.827	0.869
	9. Local export competitiveness		0.759	
	10. Local export quotas		0.859	
Factors of production	11. Local financing	0.810	0.859	0.859
	12. Local supply of raw materials		0.761	(Delete
	13. Local supply of labor force		0.752	the
	14. Local quality of labor		0.760	eleventh
	15. The same types of manufacturers in the region.		0.787	factor)
	16. Support industry and related industry chain		0.784	
	17. High industry concentration (industrial park)		0.772	
Cost	18. Local land cost	0.850	0.830	0.850
	19. Local wage		0.780	
	20. Local transport costs		0.760	
Infrastructure	21. Local water and power supply, quality and price	0.848	0.802	0.848
	22. Local communication facilities		0.806	
	23. Establishment and operation of local related units for infrastructure service		0.789	
	24. Local railway transportation is convenient or not		0.803	
	25. Local road transportation is convenient or not		0.780	
	26. Local air transportation is convenient or not		0.794	
FDI	27. Investment satisfaction	0.846		0.846
	28. Additional investment			

Note: The shaded part indicates that the dimension reliability will be improved after deleting the factor item.

Table 5-21 KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy. .819		
Bartlett's Test of Sphericity	Approx. Chi-Square	2548.721
	Df	325
	Sig.	.000

KMO = 0.820, greater than 0.7, and Bartlett's spherical test value is significant (Sig. < 0.001),

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which indicates that the questionnaire data meets the requirements of factor analysis. Therefore, the principal component analysis method is used to extract the factor, and the common factor is extracted when the eigenvalue is greater than 1. The factor is analyzed by the orthogonal rotation of the maximum variance when the factor rotates. The results are shown in Table 5-22 below.

Table 5-22 Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.725	25.867	25.867	6.725	25.867	25.867	3.689	14.190	14.190
2	3.056	11.755	37.622	3.056	11.755	37.622	3.285	12.636	26.826
3	2.543	9.781	47.403	2.543	9.781	47.403	2.530	9.730	36.556
4	1.915	7.367	54.769	1.915	7.367	54.769	2.392	9.199	45.756
5	1.540	5.921	60.691	1.540	5.921	60.691	2.365	9.097	54.853
6	1.223	4.703	65.393	1.223	4.703	65.393	2.162	8.315	63.168
7	1.033	3.973	69.366	1.033	3.973	69.366	1.611	6.198	69.366
8	.891	3.427	72.793						
9	.745	2.866	75.659						
10	.659	2.536	78.195						
11	.621	2.389	80.584						
12	.589	2.264	82.848						
13	.522	2.008	84.856						
14	.460	1.770	86.626						
15	.443	1.705	88.331						
16	.426	1.637	89.968						
17	.383	1.471	91.440						
18	.326	1.252	92.692						
19	.312	1.199	93.890						
20	.290	1.115	95.006						
21	.259	.994	96.000						
22	.245	.942	96.943						
23	.220	.845	97.788						
24	.208	.800	98.588						
25	.194	.744	99.332						
26	.174	.668	100.000						

Extraction Method: Principal Component Analysis.

From the above Table 5-22, it can be seen that there are seven factors in the result of factor analysis. The explanatory abilities are 14.190%, 12.636%, 9.730%, 9.199%, 9.097%, 8.315%, 6.198%, respectively. The total explanatory abilities are 69.366% and more than 50%, which indicates that the seven selected factors are well represented. The factor load coefficient is shown in

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Table 5-23 below; the factor load of each variable is greater than 0.5. Each variable falls into the corresponding factors, so the data has good structural validity.

Table 5-23 Rotated Component Matrix

Variables	Component						
	1	2	3	4	5	6	7
Local supply of labor force	.807						
Local quality of labor	.792						
High industry concentration(industrial park)	.773						
Local supply of raw materials	.745						
The same types of manufacturers in the region.	.708						
Support industry and related industry chain	.651						
Local road transportation is convenient or not		.805					
Local air transportation is convenient or not		.745					
Establishment and operation of local related units for infrastructure service		.718					
Local railway transportation is convenient or not		.700					
Local water and power supply, quality and price		.687					
Local communication facilities		.675					
Local export quotas			.866				
Local market openness			.839				
Local export competitiveness			.830				
Average income of local residents				.826			
Size of the economy				.821			
Growth of the gross national product				.727			
Local transport costs					.854		
Local wage					.831		
Local land cost					.797		
Local government service quality and sincerity						.856	
Local government incentives						.759	
Local social stability						.758	
Additional investment							.786
Investment satisfaction							.771

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

5.3.7.2 Correlation analysis

Through the validity analysis and reliability analysis, the structure of the dimension and the corresponding items are determined. The average score of each dimension is calculated as the score of this dimension, and then the correlation analysis is carried out. The correlation analysis mainly

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studies the correlation between variables, and the range of correlation coefficient is between - 1 and 1. The greater the absolute value, the closer the correlation between variables is. Haozheng and Yufang (2009) put forward a detailed classification method of correlation coefficient, $r=1$, which is completely correlated; $r = 0.70 < 0.99$, highly correlated; $0.40 < r < 0.69$, moderately correlated; $0.10 < r < 0.39$, low correlated; $r < 0.10$, weak or unrelated.

Table 5-24 Correlation analysis

	Politics	Economic	Openness	Factors of production	Cost	Infrastructure	FDI
Politics	1						
Economic	.417**	1					
Openness	.424**	.327**	1				
Factors of	.356**	.349**	.292**	1			
Cost	.248**	.377**	.257**	.354**	1		
Infrastructure	.183**	.091	.085	.222**	.222**	1	
FDI	.415**	.436**	.419**	.423**	.418**	.254**	1

* *. When the confidence level is 0.01, the correlation is significant.

As can be seen from the above Table 5-24, the correlation coefficients between politics, economy, openness, factors of production, cost, infrastructure, and FDI are: 0.415, 0.436, 0.419, 0.423, 0.418, 0.254, and the P values have reached the significant level of 0.01. It shows that there are significant positive correlations between politics, economics, openness, and factors of production, cost, infrastructure, and FDI.

5.3.7.3 Establishment of the structural equation model

This part mainly uses the questionnaire respondents' perception with the FDI evaluation indicators in Henan Province as exogenous observation variables, while the FDI scale are endogenous observation variables for structural equation modeling (SEM) analysis to verify the relationship between the importance of each regional FDI factor and the FDI, and then to verify the hypothesis 1 to Hypothesis 6. The names of the variables corresponding to the endogenous variables and exogenous variables in the SEM are shown in Table 5-25.

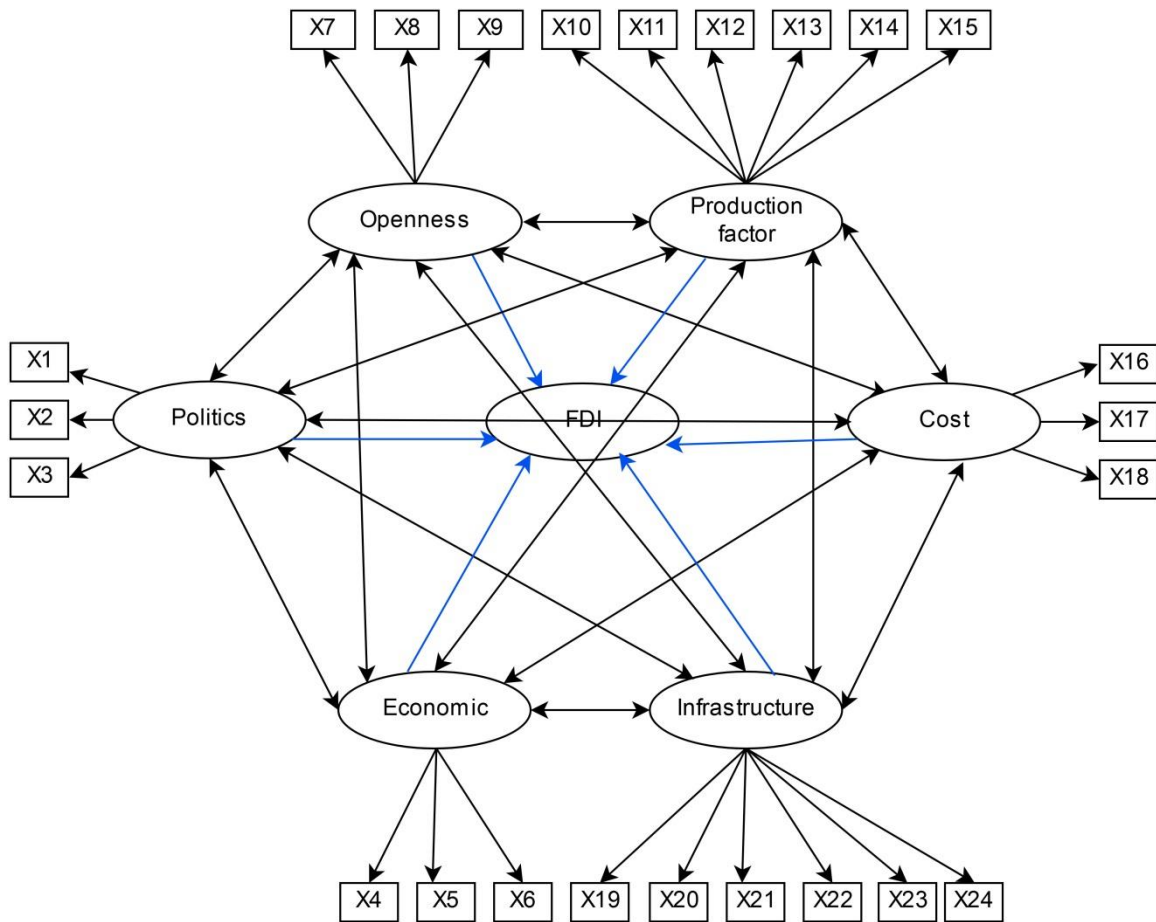
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Table 5-25 Variables in SEM model

Potential variable	Observational variables (exogenous variables)
Political environment	X1. Local social stability X2. Local government incentives X3. Local government service quality and sincerity
Economic environment	X4. Average income of local residents X5. Size of the economy X6. Growth of the gross national product
Openness	X7. Local market openness X8. Local export quotas X9. Local export competitiveness
Factors of production	X10. Local supply of raw materials X11. Local supply of labor force X12. Local quality of labor X13. The same types of manufacturers in the region. X14. Support industry and related industry chain X15. High industry concentration (industrial park)
Cost	X16. Local land cost X17. Local wage X18. Local transport costs
Infrastructure	X19. Local water and power supply, quality and price X20. Local communication facilities X21. Establishment and operation of local related units for infrastructure service X22. Local railway transportation is convenient or not X23. Local road transportation is convenient or not X24. Local air transportation is convenient or not
Potential variable	Observational variables (endogenous variables)
	Y1: Investment satisfaction Y2: Additional investment

In the construction of the entire SEM, first of all, this study established a model based on relevant theories and literatures and thus established the path of causal relationship. Then change the method defined by AMOS software from generalized least square method (GLS) to maximum likelihood estimation (ML) to estimate parameters. The original conceptual SEM model of this study is shown in Figure 5-6.

Figure 5-6 Preliminary SEM diagram



Note: Made by the author

5.3.7.4 The revision process of the SEM

After the model is constructed, the AMOS software is used to estimate the model. When measuring the linear structure relationship model, the chi-square value, P-value, GFI (Goodness of Fit Index), AGFI (Adjust Goodness of Fit Index), RMSR (Root Mean Square Standardized Residual) and other indicators will be referred to judge the quality of the model, in which the chi-square value should be as small as possible. Usually, the chi-square value must be small enough to accept the P-value greater than 0.05 to accept the model. The GFI and AGFI values range from 0 to 1. The larger the value of the two indicators, the better the effect it is. The RMSR represents the residual, and it usually should be less than 0.05. The fit indices of the preliminary model were shown in Table 5-26 below, and specific indicators are as follows:

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Table 5-26 Model Fit indices

Fit indices	Acceptable values
χ^2	
P value	$0.05 \leq p \leq 1.00$ (Hoyle 1995)
χ^2/df	< 3 (Kline 2005)
Goodness of Fit Index (GFI)	$\geq .90$ (Hair, Black, Babin, Anderson and Tatham 2006)
Adjusted Goodness of Fit Index (AGFI)	$\geq .80$ (Marsh, Balla and McDonald 1988)
Root Mean Square Residuals (RMR)	$< .05$ (McDonald and Ho 2002)
Root Mean Square Error of Approx (RMSEA)	$< .08$ (Hair, Black, Babin, Anderson and Tatham 2006)
Incremental Fit Index (IFI)	$\geq .90$ (Bollen 1989)
Non-Normed Fit Index (NNFI, TLI)	$\geq .90$ (Bentler and Weeks 1980)
Comparative Fit Index (CFI)	$\geq .90$ (Bentler 1990)

Table 5-27 Preliminary models fit statistics

$\chi^2 = 443.499$
Degrees of Freedom = 278
$\chi^2/df = 1.595$
$\chi^2/df = 1.590$
P-level = 0
RMS Standardized Residual = 0.046
GFI = 0.860
AGFI = 0.823

From table 5-27, the P value was not significantly higher than 0.05 and GFI is not higher than 0.9, indicating that the preliminary model of the study is not suitable. Therefore, the model should be revised to explore the endogenous relationship of the variables, and the model correction work is carried out. Normalized Residual can be used to estimate the model when the model is not well suitable (See Appendix IV). When the value of standardized residual is greater than 2, it shows that the variable has the obvious prediction error, which is a variable that can be considered to be deleted. The model correction process and model fitting indicators are shown in Table 5-28.

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Table 5-28 Indicators of fitness of each SEM model

Model	1 *	2	3	4	5	The final model fitting
Original model		1	2	3	4	
Delete variable		X21	X20	X13	X9	
DF	278	254	231	209	188	Yes
χ^2	443.499	379.787	327.198	286.936	254.945	Yes
χ^2/df	1.595	1.495	1.416	1.373	1.356	Yes
P-level	0.000	0.000	0.000	0.000	0.001	No
RMS	0.046	0.045	0.044	0.044	0.041	Yes
RMSEA	0.055	0.050	0.046	0.044	0.042	Yes
GFI	0.860	0.876	0.887	0.894	0.901	Yes
AGFI	0.823	0.841	0.853	0.86	0.867	Yes
IFI	0.931	0.945	0.956	0.963	0.966	Yes
TLI	0.918	0.933	0.947	0.954	0.957	Yes
CFI	0.930	0.944	0.955	0.962	0.965	Yes

Table 5-28 shows the modification steps from the initial model to the final model, including the various fitting indicators to judge the models, and the deleted variables using the standardized residuals. It is better to have three measurement variables to estimate for each potential variable, and it should have at least three measurement variables to estimate (Haozheng and Yufang 2009). Therefore, in the process of model revision, the variables will be deleted on the premise of guaranteeing the three measurement variables of potential variables.

In the initial model 1, $\chi^2=443.499$, $p\text{-value}=0$, $RMS=0.046$, $RMSEA=0.055$, $GFI=0.860$, $AGFI=0.823$, $IFI=0.931$, $TLI=0.918$, $CFI=0.930$. The indicators show that this model is not good. According to the standardized residual matrix in Appendix IV, there are residual values of 2.313 between variable (X21) and variable (X20). According to the descriptive statistics of various variables, “local communication facilities(X20)” is more important than “establishment and operation of local related units for infrastructure service (X21)”. So the variable (X21) is deleted.

After deleting the variable X21, it can be found that the model 2 has a significant improvement, but the P value is still below the level of 0.05, and GFI is below 0.9. It shows that this model is still not good. It is necessary to perform the correction and review standardize residual matrix again. It shows that the “local communication facilities (X20)” and “local water and power supply, quality and price (X19)” and “local supply of raw materials (X10)” have the residual value more than 2. Because the residual value of the variable(X20) and the other two variables(X10) (X19) is greater than 2, so the variable X20 is deleted.

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In model 3 obtained after correction from model 2, $\chi^2=327.198$, $p\text{-value}=0$, $RMS=0.044$, $RMSA=0.046$, $GFI=0.887$, $AGFI=0.853$, $IFI=0.956$, $TLI=0.947$, $CFI=0.955$. The indicators show that this model is better than the Model 2, but the P value, GFI, TLI, and CFI have not reached the significant level, and this model is still not accepted. Therefore, it is necessary to review the standardized residual matrix for the variable deletion step and find that the standardized residual value of “the average income of local residents (X4)” with “the same types of manufacturers in the region (X13)” is more than 2. Compared with variable X4, the potential factor that variable X13 belong to has more than 3 measurement variables, so choose to delete variable X13.

In model 4 obtained after correction from model 3, $\chi^2=286.936$, $p\text{-value}=0$, $RMS=0.044$, $RMSA=0.046$, $GFI=0.894$, $AGFI=0.860$, $IFI=0.963$, $TLI=0.954$, $CFI=0.962$. The indicators show that this model is better than Model 3. However, the GFI has not reached the significant level; this model is still not accepted. I make the correction work again, conduct the variable deletion step and find that the standardized residual value of “the average income of local residents (X4)” with “local export competitiveness (X9)” is more than 2. If variable X4 is deleted, the model will not be able to work. So choose to delete variable X9.

The final modified model 5 is shown in Table 5-34. The model 5 obtained after correction from model 4, $\chi^2=254.945$, $p\text{-value}=0.001$, $RMS=0.041$, $GFI=0.901$, $AGFI=0.867$, $IFI=0.966$, $TLI=0.957$, $CFI=0.965$. All indicators show that this model is better than the Model 4. Although the P value is still 0, other indicators have met the model fitness requirements. In the case of more than 200 samples, the P value is significant in almost all studies, so it is necessary to use other fitness indicators to assist the model judgment (Maruyama 1997; Tanaka 1993).

Model 5 is the best model in all models in terms of appropriate fitness indicators. Although the residual value between variables X16 and X10 is still greater than 2, it is based on the consideration of maintaining the integrity of the model and the importance of these two variables to the investment of enterprises. Therefore, the model will not be revised any more. This model has reached a fairly reasonable fitness so that the study will use model 5 as the basic model for hypothesis verification. The estimated results of the revised model parameters are shown in Table 5-29 and Table 5-30, and the revised model path diagram is detailed in Figure 5-7, Figure 5-8 and Figure5-9.

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Table 5-29 Regression Weights

			Estimate	S.E.	C.R.	P	Standardized Estimate
FDI	<---	Politics	.237	.119	1.987	.047	.185
FDI	<---	Economics	.251	.124	2.014	.044	.182
FDI	<---	Openness	.151	.083	1.825	.068	.152
FDI	<---	Factors of production	.264	.114	2.319	.020	.178
FDI	<---	Cost	.258	.102	2.538	.011	.212
FDI	<---	Infrastructure	.284	.196	1.449	.147	.103
X1	<---	Politics	1.000				.681
X2	<---	Politics	.974	.111	8.805	***	.786
X3	<---	Politics	.941	.107	8.803	***	.786
X4	<---	Economics	1.000				.730
X5	<---	Economics	1.399	.129	10.882	***	.907
X6	<---	Economics	1.054	.109	9.640	***	.719
X7	<---	Openness	1.000				.829
X8	<---	Openness	.992	.106	9.373	***	.913
X10	<---	Factors of production	1.000				.731
X11	<---	Factors of production	1.105	.104	10.596	***	.815
X12	<---	Factors of production	1.003	.101	9.974	***	.760
X14	<---	Factors of production	.819	.100	8.200	***	.622
X15	<---	Factors of production	.943	.100	9.455	***	.718
X16	<---	Cost	1.000				.756
X17	<---	Cost	1.123	.101	11.153	***	.830
X18	<---	Cost	1.085	.096	11.265	***	.846
X19	<---	Infrastructure	1.000				.515
X22	<---	Infrastructure	1.571	.260	6.041	***	.595
X23	<---	Infrastructure	2.378	.341	6.981	***	.887
X24	<---	Infrastructure	1.945	.283	6.871	***	.762
Y1	<---	FDI	1.000				.866
Y2	<---	FDI	.982	.092	10.632	***	.846

Note: 1. The significance level is $\alpha = 0.05$.

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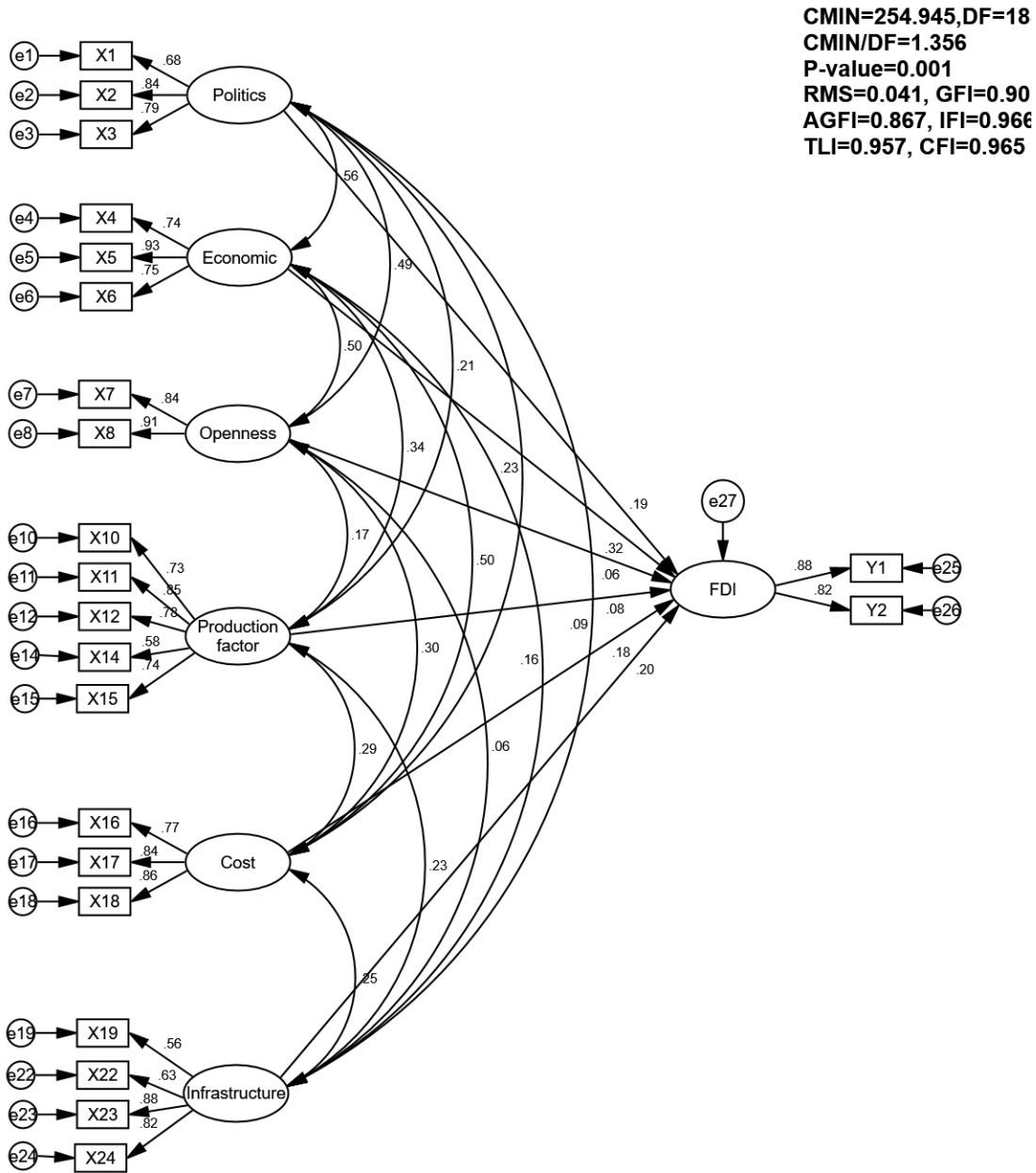
Table 5-30 Covariances and Correlations

			Estimate	S.E.	C.R.	P	Correlations
Politics	<-->	Economic	.230	.049	4.649	***	.490
Politics	<-->	Openness	.317	.068	4.634	***	.488
Politics	<-->	Production factor	.121	.040	3.028	.002	.278
Politics	<-->	Cost	.153	.049	3.126	.002	.288
Politics	<-->	Infrastructure	.028	.021	1.349	.177	.118
Economic	<-->	Openness	.255	.058	4.370	***	.422
Economic	<-->	Production factor	.117	.036	3.275	.001	.291
Economic	<-->	Cost	.221	.048	4.606	***	.449
Economic	<-->	Infrastructure	.027	.018	1.486	.137	.125
Openness	<-->	Production factor	.144	.049	2.954	.003	.258
Openness	<-->	Cost	.200	.060	3.304	***	.293
Openness	<-->	Infrastructure	.014	.025	.574	.566	.047
Production factor	<-->	Cost	.154	.041	3.725	***	.339
Production factor	<-->	Infrastructure	.036	.018	2.055	.040	.179
Cost	<-->	Infrastructure	.053	.022	2.411	.016	.215

Note: 1. The significance level is $\alpha = 0.05$.

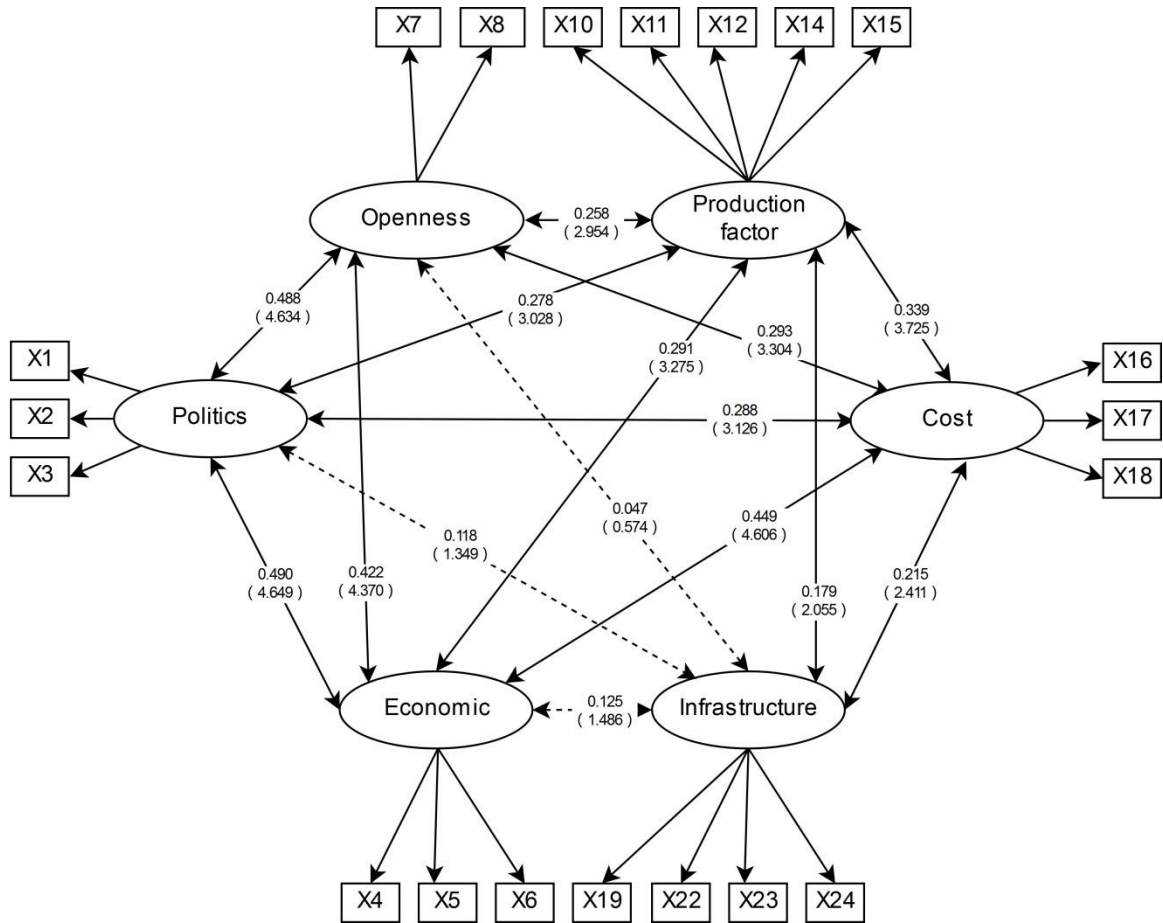
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Figure 5-7 SEM model made by AMOS



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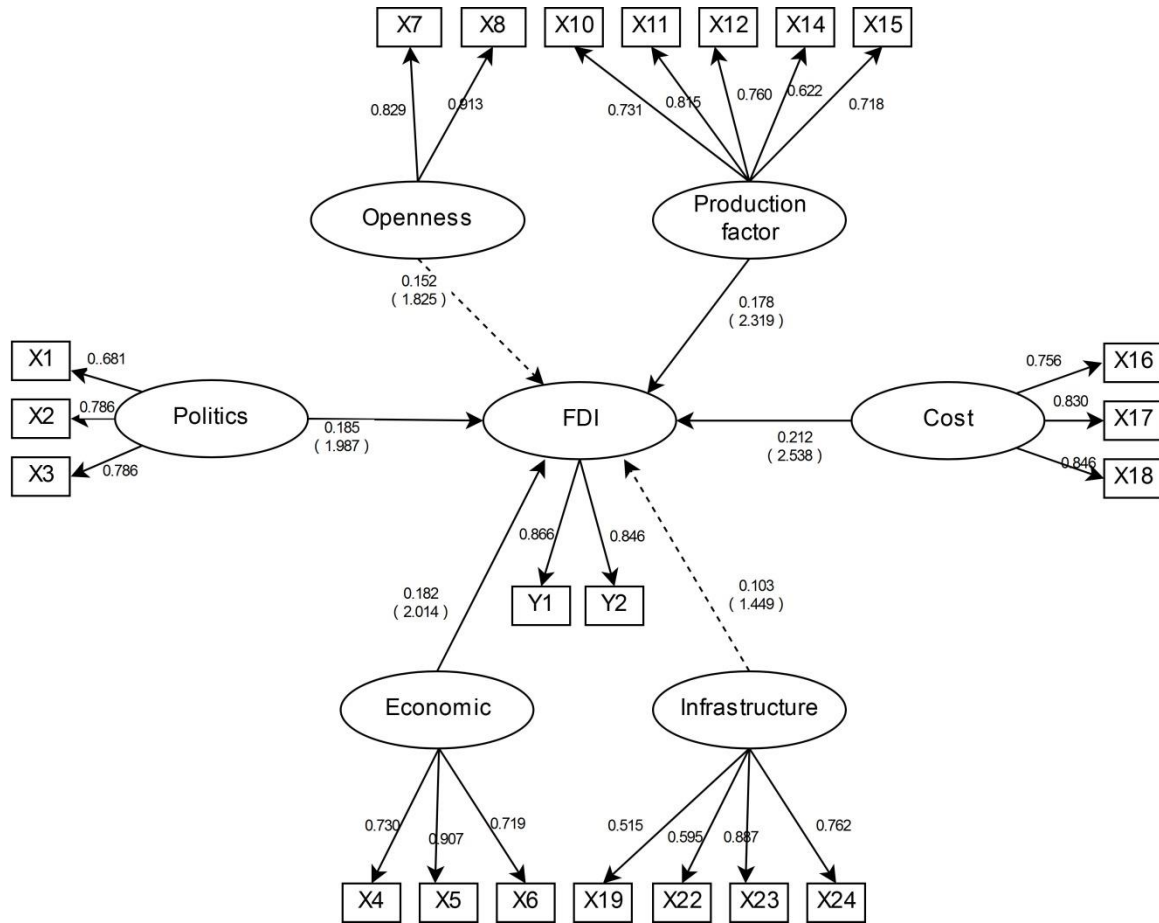
Figure 5-8 Modified SEM model (Correlation)



Note: \longleftrightarrow : Correlation (significant)
 \dashrightarrow : Correlation (not significant)
 () : T-value

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Figure 5-9 Modified SEM model (Path)



Note: \longleftrightarrow : Path coefficient (significant)
 \dashrightarrow : Path coefficient (not significant)
 (): T-value

5.3.7.5 Analysis of SEM model results

After correcting the structural equation model, this study will take the estimated coefficient obtained in model 5 as the statistic in the study, and then explores the hypothesis test of this study. That is, examine the effects of the “political environment factors,” “economic environment factors,” “openness factors,” “factors of production,” “cost factors” and “infrastructure factors” on foreign investment and the correlations between factors, the discussion of each hypothesis verification is as follows:

I. Correlations among factors

From the modified model of Figure5-9, there are twelve groups of factors which are correlated and significant, respectively including politics and economics, politics and openness, politics and factors of production, politics and cost, economic and openness, economic and factors of production, economic and cost, openness and factors of production, openness and cost, factors of production and cost, factors of production and infrastructure, cost and infrastructure. The reason for the correlation between politics and the economy is that through policy guidance and incentives, the economy will also change accordingly, and the economy will accurately feedback to influence policy. The reason why politics and openness correlate is that openness in China itself is closely related to politics. Openness through policy will affect policy again. The reason for the correlation between politics and factors of production is that the industrial agglomeration in the factors of production and the establishment of industrial parks are under the light of policy support. Although the flow of factors of production among regions has been freed from the limitations of the planned economy in the past, the influence still exists. The reason for the correlation between politics and cost is that the local government has proper control over the prices of the products. The reason for the correlation between economic and openness is that the economy and openness are mutually reinforcing and influencing. The reason for the correlation among economic, factors of production and cost is that the better the economic development, the faster the flow of factors of production, and the more concentrated the industry will be, and the economies of scale will be formed, and the cost will be more advantageous. The reason for the correlation between openness, factors of production, and cost is that openness promotes economic development, and economic development further promotes the flow of factors of production, thus affecting production costs. As for the correlation among factors of production, infrastructure, and cost, the better the infrastructure, the

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better the economy, the better the supply of factors of production, the more cost advantage.

II. The effect of political factors on FDI.

In terms of the relationship between “political environment factors” and FDI, the path coefficient is 0.185, at the significant level ($C.R. = 1.987 > 1.96$), and its influence direction is positive, indicating that there is a significant positive relationship between political factors and FDI. In other words, when the political environment is better, and the policy incentives are stronger, the higher the satisfaction of the companies with the FDI, the more likely they are to invest. On the contrary, when the political environment is bad, policy incentives are not in place, and the political environment is unstable, investor satisfaction and additional investment will decline accordingly. Therefore, the research *hypothesis H1: Political environment factors will have an impact on the FDI*, which is supported in this SEM analysis. The “local government incentives” (X2) and “local government service quality and sincerity”(X3) have the highest impact in the measurement of political environmental factor. The path coefficients are 0.786 after standardization, followed by “local social stability” (X1), and the path coefficient is 0.681. The T values of these path coefficients are all at the significant level, indicating that the three measured variables are significantly positively related to political environment factors. Among them, “local government incentives” (X2) and “local government service quality and sincerity” (X3) can best explain the political factors.

III. The effect of economic environment factor on FDI.

In terms of the relationship between “economic environment factor” and FDI, the path coefficient is 0.182, at the significant level ($C.R. = 2.014 > 1.96$) and it has the positive relationship with FDI, which shows that the better the economic environment, the higher the company's satisfaction with FDI and more additional investment. Therefore, the research *hypothesis H2: Economic environment factor will have an impact on FDI*, which is supported in this study. In the measurement of the economic environment factor, “size of the economy” (X5) has the highest impact on economic factors. Its path coefficient is 0.907 after standardization, followed by “average income of local residents” (X4) and “growth of the gross national product” (X6). The path coefficient is 0.730 and 0.719, respectively. The T values of the path coefficients are all at the significant level, and the coefficients are significant, showing that the measurement variables and economic environment factor are significantly positively related, among which the “size of the

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economy” (X5) can best explain the economic environment factor.

IV. The effect of openness factor on FDI.

In terms of the relationship between “openness factor” and FDI, its path coefficient is 0.152, and it has the positive relationship with FDI. The better the openness is, the higher the satisfaction of foreign investors will be, and the investors will make more additional investments. However, the T value of this path coefficient does not reach the significant level ($C.R=1.825 < 1.96$). Therefore, the research hypothesis *H3: Openness factor will have an impact on FDI* is not valid. Openness factor has the positive effect on FDI, which is not supported in this study. It may be due to the inconsistency of respondents' perceptions of openness and their vulnerability to subjective awareness. Therefore, they are prone to preconception or investors do not value the openness of Henan Province. If they attach great importance to this factor, investors will not choose to invest in central China, which leads to no significant positive relationship between openness and FDI. In the measurement of the openness factor, “local export quotas” (X8) has the highest impact on openness factor. Its path coefficient is 0.913 after standardization, followed by “local market openness” (X7). The path coefficient is 0.829. The T values of the path coefficients are at the significant level, and the coefficients are significant, showing that the measurement variables and openness factors are significantly positively related, among which the “local export quotas” (X8) can best explain the openness factors.

V. The effect of factors of production on FDI.

In terms of the relationship between factors of production and FDI, its path coefficient is 0.178, at the significant level ($C.R.=2.319 > 1.96$) and it has the positive relationship with FDI. It shows that there is a significant positive relationship between factors of production and FDI. That is, the better the production environment, and the easier the factors are to be obtained, the higher the satisfaction of foreign direct investors is and will make more investment. In contrast, when the production environment is terrible, and the resources are not natural to be obtained, then its influence on FDI is lower, and the investors will eventually give up. So the *hypothesis H4: Factors of production will have an impact on FDI*, which get significant support in this study. The influence of “labor supply” (X11) on factors of production is the highest. Its path coefficient is 0.815 after standardization, followed by “supply of raw materials “(X10), “the same types of manufacturers in the region “ (X12), “support industry and related industry chain” (X14) and “high industry

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concentration(industrial park)” (X15) with path coefficients of 0.731, 0.760, 0.622 and 0.718, respectively. The T values of the path coefficients all reach the significant level, showing that the measurement variables and factors of production are significantly positively related, among which the “labor supply” (X11) and “supply of raw materials “(X10) can best explain the factors of production.

VI. The effect of cost on FDI.

In terms of the relationship between cost and FDI, its path coefficient is 0.212, at the significant level ($C.R. = 2.538 > 1.96$) and it has the positive relationship with FDI. It shows that there is a significant positive relationship between cost and FDI. The cost factor has the highest coefficient of all factors, which means that the respondent is very concerned about the cost factor, the more reasonable the cost, the higher the satisfaction with the FDI and the more additional investment will be made. So the hypothesis *H5: Cost factor will have an impact on FDI*, which get significant support in this study. The influence of “land transport cost”(X18) on cost factors is the highest. Its path coefficient is 0.846 after standardization, followed by “land cost” (X16) and “local wage”(X17) and with path coefficients of 0.756 and 0.830, respectively. The T values of the path coefficients all reach significant levels, showing that the measurement variables and cost factors are significantly positively related. Here, transportation costs are more valued, and Henan province is located in an important transportation hub in central China, where several large North-south, East-West railways, and highways converge. Zhengzhou, the provincial capital, became a national central city and a national transportation hub in 2018, which takes the local transport cost advantage compared with other regions.

VII. The effect of infrastructure on FDI.

In terms of the relationship between “infrastructure factor” and FDI, the path coefficient is 0.103, which is a positive relationship. It shows that the better the infrastructure, the higher the investment satisfaction of enterprises. However, the T value of this path coefficient does not reach the significant level ($C.R.=1.449 < 1.96$). Therefore, the research hypothesis *H6: Infrastructure factor will have an impact on FDI* is not valid. The reason for the failure of this relationship may lie in the fact that enterprises are generally satisfied with the infrastructure, that is, infrastructure has performed well and has little difference in the whole region in recent years. Therefore, this path coefficient is not significant. It led to the fact that although the respondents scored highly on these

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items of infrastructure, it did not become a key factor in determining investment. In the measurement of infrastructure factors, “road transport convenience” (X24) has the highest impact on infrastructure factors. Its path coefficient is 0.887 after standardization, followed by “supply and quality of power and water” (X19), “Railway transport convenience” (X22), “airplane transport convenience” (X23) with path coefficients of 0.515, 0.595 and 0.762, respectively. The T values reached the significant level, showing that the measurement variables and infrastructure factor are significantly positively related, among which the “road transport convenience” (X24) and “airplane transport convenience” (X23) can best explain the infrastructure factors.

VIII. Hypothesis validation

The hypothesis validation of this study is summarized in the following table:

Table 5-31 Hypothesis validation summary

Hypothesis	Result
<i>H1: Political environmental factors will have an impact on FDI</i>	Support
<i>H2: Economical environmental factors will have an impact on FDI</i>	Support
<i>H3: Openness factors will have an impact on FDI.</i>	Not support
<i>H4: Factors of production will have an impact on FDI.</i>	Support
<i>H5: The cost factor will have an impact on FDI.</i>	Support
<i>H6: The infrastructure factor will have an impact on FDI.</i>	Not support
<i>H7: Clusters that are valued by different factors will have significant differences in cognitive considerations for each FDI factor.</i>	Support.
<i>H8: Different enterprises characteristics will have significant differences in cognitive considerations for each FDI factor.</i>	Support
<i>H8-1: Enterprises size will have significant differences in FDI factors.</i>	<u>Partial support.</u> Significant differences in politics.
<i>H8-2: The investment period of enterprises has significant differences in FDI factors.</i>	<u>Partial support.</u> Significant differences in politics and transport infrastructure

5.4 Summary

This study explores the factors that enterprises consider when investing in Henan from the perspective of foreign investors and analyzes the relationship between the importance of environmental factors and FDI.

I. Analysis of the importance of factors affecting FDI

According to the results of this study, among the 26 variables affecting FDI, the top five variables that the company considers to affect its investment are “local land cost”, followed by

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“local road transportation is convenient or not” and “local export quotas' local water and power supply” and “local communication facilities”. Overall, infrastructure variables are the majority. Although in the subsequent analysis, infrastructure has no significant effect on FDI; investors still have high requirements for infrastructure factor, because it is a prerequisite for all economic activities. The next five variables are “high industry concentration (industrial park),” “local air transportation is convenient or not,” “local quality of labor,” “the same types of manufacturers in the region” and “local wage.” These variables are main factors in terms of aggregation and cost, which are consistent with subsequent interviews with companies.

II. Analysis of FDI factors in various regions of Henan Province

In the previous study, there was a very significant difference in the distribution of FDI in different regions. Therefore, this study conducted the comparative analysis of the factors affecting FDI in three regions of Henan Province. Among all the factors, investors pay more attention to the openness in the central city belt, more valued infrastructure, cost, and factors of production in the north of Henan, and think highly of infrastructure, politics, and factors of production in the south of Henan.

III. Cluster Analysis of Influencing Factors

Through factor analysis, it can be seen that the influential factors can be divided into seven factors: “politics,” openness,” “economy,” “cost,” “factors of production,” “transportation infrastructure” and “general infrastructure.” The small-sized and medium-sized enterprises with less than 5 million and between 5 and 30 million are classified as “cost-oriented type”; the medium-sized and super-large enterprises with between 5 and 30 million and more than 100 million are “transport infrastructure-oriented type”; Medium-sized enterprises with between 5 and 30 million are classified as “factors of production and general infrastructure-oriented type.”

IV. The impact of corporate characteristics on FDI factors

This study is based on the foreign direct investors in Henan Province. Because the external environment affects the enterprise’s investment evaluation, decision-making, the internal factors of the enterprise are also one of the important factors. Therefore, this study attempts to explore the impact on different factors because of the characteristics of the enterprise. The results show that among the different variables of enterprises characteristics, “enterprises size” and “investment

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period” have significant differences in investment factors intention. Among them, the larger investment the enterprises made, the more they attach importance to the political environment. As for companies with more employees, they pay more attention to the political environment. The larger the company, the more bargaining powers it negotiates with the government. The longer the enterprises invest, the more they attach importance to the political environment and transport infrastructure.

V. The impact of corporate characteristics on FDI.

With the development of Henan's industrial upgrading, the companies in the tertiary industry have shown great enthusiasm in future additional investment. The industrial advantage of the agricultural provinces of Henan Province still exists. Companies with a Chinese background have a very important position in the initial investment, but as the investment deepens and additional investment is made, the gap caused by this cultural proximity will gradually decrease.

VI. Analysis of regional factors on FDI

This study constructs the SEM model of the causal relationship with FDI based on the perception of the importance of “political environment factor,” “economic environment factor,” “openness factor,” “factors of production,” “cost factor” and “infrastructure factor.” In the whole model verification, it was found that political environment factor, “economic environment factor”, “factors of production “ and “cost factors” have the significant positive impact on FDI. That is, when the politic, economic, production environment and cost are better, the more enterprises go to invest and set up companies and factories in Henan province. The impact of cost factor on FDI is greater than the other factors, indicating that cost is still the most important factor affecting the willingness of enterprises to invest in Henan province. Among the political environment factors, the “local government incentives” has the highest impact on political environment factor, followed by “local government service quality and sincerity”; and “size of the economy” has the highest impact on economic environment factor, followed by “the average income of local residents.” Among the factors of production, the “local supply of labor force” has the highest impact on factors of production, followed by “local quality of labor” and “high industry concentration (industrial park)”; and “local transport cost” has the highest impact on the cost factor, followed by “local wage” and “local land cost”.

Moreover, the impact of openness and the infrastructure on FDI did not receive statistically

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significant support in the study. In terms of openness, it may be influenced by individual subjective consciousness. After all, the openness of a region is more abstract for individuals, so that there exists preconceived bias in the degree of openness, resulting in no significant impact on FDI. In terms of infrastructure, descriptive analysis shows that corporate respondents generally have a high awareness of the importance of “infrastructure.” However, due to the development of infrastructure in recent years, the actual infrastructure in various regions of Henan Province is not very different and is no longer the main reason for the investment. Therefore, there is no significant impact on FDI. As a result, the relationship between “openness factor” and “infrastructure factor” on “FDI” cannot be statistically significantly supported in this chapter.

CHAPTER6 THE REGIONAL DETERMINANTS OF FDI IN HENAN PROVINCE FROM -CASE ANALYSIS

The fieldwork began in January 2018. Based on the existing theories and empirical analysis results, this chapter used case studies to compensate for the lack of empirical results to further clarify the relationship between variables. The cases of three FDI companies entering the Henan area are expected to be more in line with the actual situation and to get more information that cannot be seen in the model and theory.

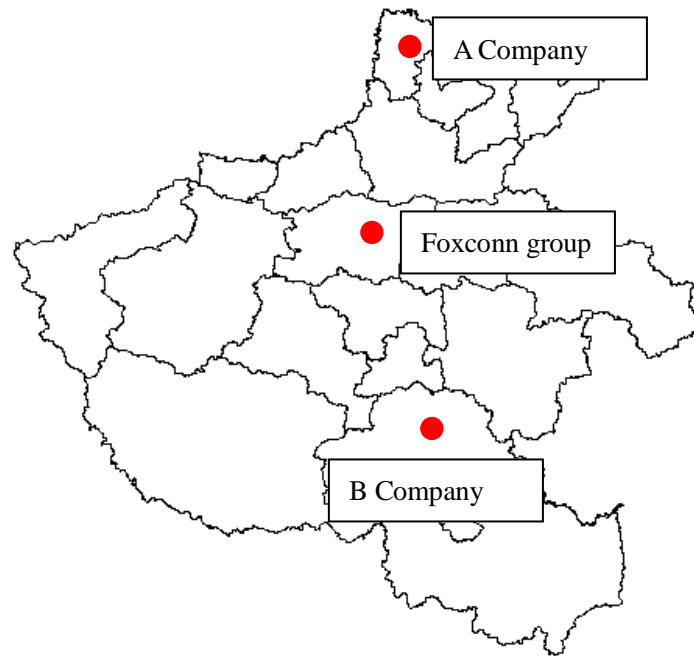
6.1 Case analysis method

6.1.1 Case selection

The research objects of this section are the foreign investors that entered in Henan province. Due to the limitation of workforce and funding, the amount of FDI inflow, location, and their industry are chosen as the selection criteria. Three FDI enterprises invested in Henan Province were investigated, and only three of them were selected for analysis because of confidentiality. The three companies that can provide corresponding information and materials will be analyzed. In order to ensure that the investigated company's survey content is real and valid, the names of the companies under investigation are anonymous. These companies are mainly Foxconn in the central city belt economic zone, A company in the northern economic zone of Henan, B company in the southern economic zone of Henan (See Figure 6-1).

Foxconn is the largest FDI project introduced in Henan in recent years, and it is a typical labor-intensive company that moved from coastal developed to the inland. It is a representative company in the choice of location in Henan.

Figure 6-1 Distribution of surveyed companies



Note: Made by the author based on ArcGIS software.

6.1.2 Method of collecting case data

The study used primary and secondary data for case analysis. The primary data is an in-depth interview with executives who are familiar with corporate affairs in case companies. The interviews include the company's operating history, its investment motives, and dilemmas, etc. The secondary information is based on the financial statements and published specifications of the case company.

Foxconn is a typical super-large enterprise in FDI projects. In the process of choosing the region for investment, the national macro-policy, the industrial environment, and the positive response of local governments are the most critical factors in its investment. It is a typical representative of this type of enterprise, so Foxconn is selected as the primary analysis object. However, Foxconn high-level executives who make investment decisions are difficult to contact. Only general staff can be contacted to provide Foxconn company data for analysis. The analysis of other companies is more in the form of in-depth interviews.

6.1.3 Case analysis process

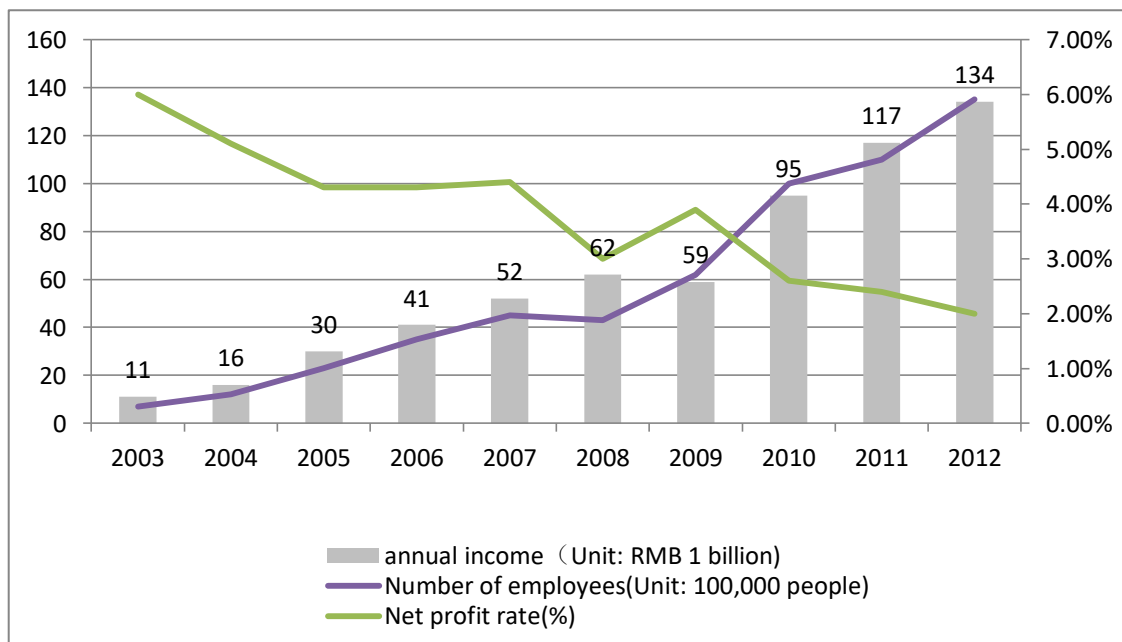
The case analysis is based on previous theories. This study will summarize the main observed phenomena.

6.2 Foxconn

6.2.1 basic information

Foxconn is a high-tech enterprise established by Taiwan Hon Hai Group to produce 3C (computer, communication, consumer electronics) and semiconductor equipment. It mainly manufactures products for well-known electronic enterprises such as Apple, Hewlett-Packard, and Dell, etc. In 2013, Foxconn Science and Technology Group ranked 30th in the world and was mainly located in Shenzhen, Kunshan, Yantai and other eight major science and Technology Industrial parks in China. Corporate sales revenue and the number of employees have increased since 2003. However, the net profit margin has shown a gradual decline. In 2012, the corporate net profit margin was less than 2% (See Figure 6-2).

Figure 6-2 Employee Number, Net Profit Rate and Annual Income of Foxconn Technology Group from 2003 to 2012



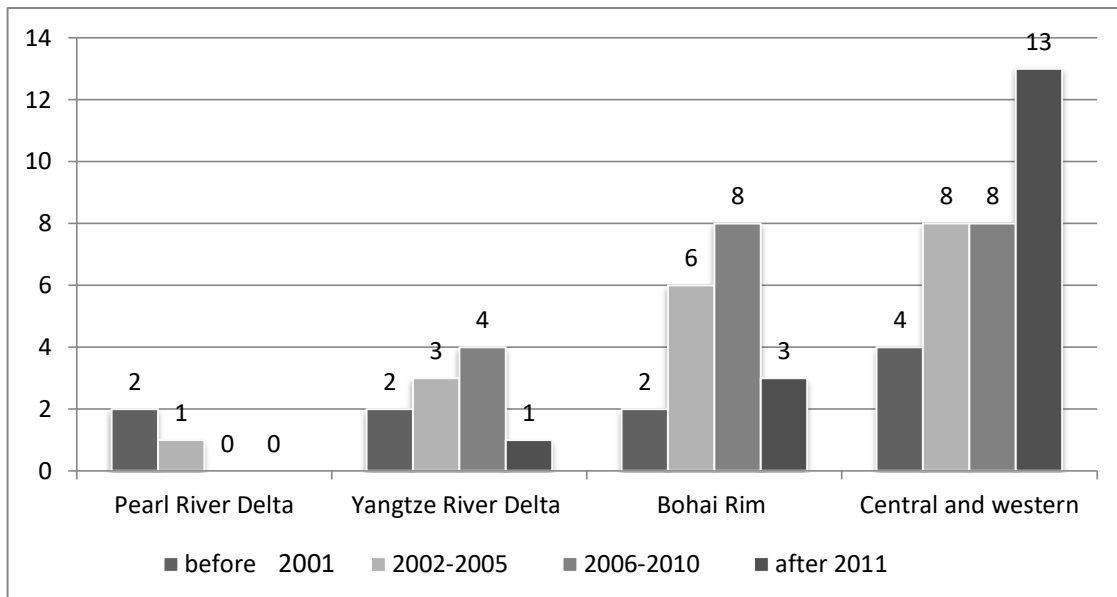
Source: Foxconn Technology Group

Since its establishment in Shenzhen in 1988, the development and layout of Foxconn in China can be divided into three stages: in the 1990s, the main layout was in the opening and coastal areas such as Shenzhen and Kunshan, mainly based on the processing and manufacturing of precision molds. In the early 21st century, Foxconn adopted the M&A modes and rapidly expanded in the Bohai Rim region and the Yangtze River Delta region represented by Yantai and Nanjing⁶⁶. Since

⁶⁶ The Pearl River Delta, the Yangtze River Delta and the Bohai Rim region are all eastern and southern coastal areas that are open first in China.

2010, it has stepped into the central and western regions of Zhengzhou, Chengdu, and Nanning because of cheap labor and preferential policies. As can be seen from Figure 6-3, Foxconn has shifted to the central and western regions since 2011.

Figure 6-3 Foxconn's factory distribution in China



Source: Foxconn Technology Group

6.2.2 The reasons for the migration to the central and western regions.

6.2.2.1 Demands of Coastal Areas

Under the background of land cost, labor cost, industrial upgrading and the change of preferential policies of local governments in the eastern coastal areas, Foxconn gradually began its expansive layout of “moving central and westward.” In Foxconn's production process, raw materials are not resource-dependent, and products are exported to foreign countries, which makes the company’s moving more in consideration of reducing its operating costs. Through the way of enterprise migration, the processing and manufacturing links with stricter cost control such as land and labor are transferred to low-cost areas, to promote the industrial upgrading of enterprises' transfer-out areas. It is the general logic for the development of large-scale international labor-intensive enterprises.

Since 2005, Shenzhen put forward “four difficult to sustain,”⁶⁷ the urbanization development

⁶⁷ In May 2005, Li Hongzhong, the deputy secretary of the Shenzhen Municipal Party Committee, said publicly that the development of Shenzhen is facing four unsustainable problems: first, land and space are difficult to sustain; second, energy and water resources are difficult to sustain ;third, the realization of trillions of GDP requires more labor input, and the city is already overwhelmed by the population and it is difficult to sustain it.;fourth, the environmental carrying capacity is difficult to sustain.

of Shenzhen has changed from “quantitative change” to “qualitative change,” continually raising the threshold of attracting investment, promoting industrial upgrading, eliminating and relocating labor-intensive processing enterprises with low added value. From the contribution of Foxconn to the development of Shenzhen, it has increased the total economic volume of Shenzhen, increased the volume of export trade, and promoted the formation of supporting facilities for the industrial chain of Shenzhen processing industry. However, the factors such as “incoming processing” and “numerous subsidiaries” make it pay little tax and make no significant contribution to Shenzhen's local finance. While its 400,000 employees have spent a lot of government energy and management costs, that is to say, the coastal areas represented by Shenzhen have the internal driving force for the transformation and upgrading or relocation of Foxconn enterprises. Foxconn is a labor-intensive company. For cost-sensitive Foxconn, under the conditions of a vast population hinterland in the central and western regions of China, they will tend to carry out “industrial transfer” rather than “industry upgrade.”

6.2.2.2 Consideration Based on Production Function

Nakosteen and Zimmer (1987) proposed a model of regional migration by manufacturing firms. The model assumes that the goal of an enterprise is to maximize profits, and the price of products and factor markets is not affected by any enterprise. The profit function of the enterprise i of region j is:

$$E_{ij} = (X_i, Z_j, \varepsilon_{ij}) \quad (6.1)$$

Among them, X_i is a specific factor of the enterprise or market; Z_j is a location-specific factor, ε_{ij} is a specific influence that is not considered. When appear,

$$E_{ij} = (X_i, Z_j, \varepsilon_{ij}) < E_k \quad (6.2)$$

According to economic theory, if the price cannot compensate for the average variable cost, the enterprise will stop production or close down. In the process of market operation, enterprises may consider choosing to move to low-cost areas, to raise the profit margin to the critical value E_k again. That is to say, whether or not the enterprise moves is based on the cost-profit comparison between the place of transfer and the transfer destination.

In order to more easily study the relationship between capital input and output, this paper uses

Cobb-Douglas Functions in economics(John, Murray and Peter 1998). Namely:

$$P = bL^k C^{1-k} \quad (6.3)$$

Among them, P is output, L is labor, C is capital, and b and k are parameters to be estimated. In China, Yanbing (2006) and other scholars have expanded the production function of manufacturing enterprises. Namely:

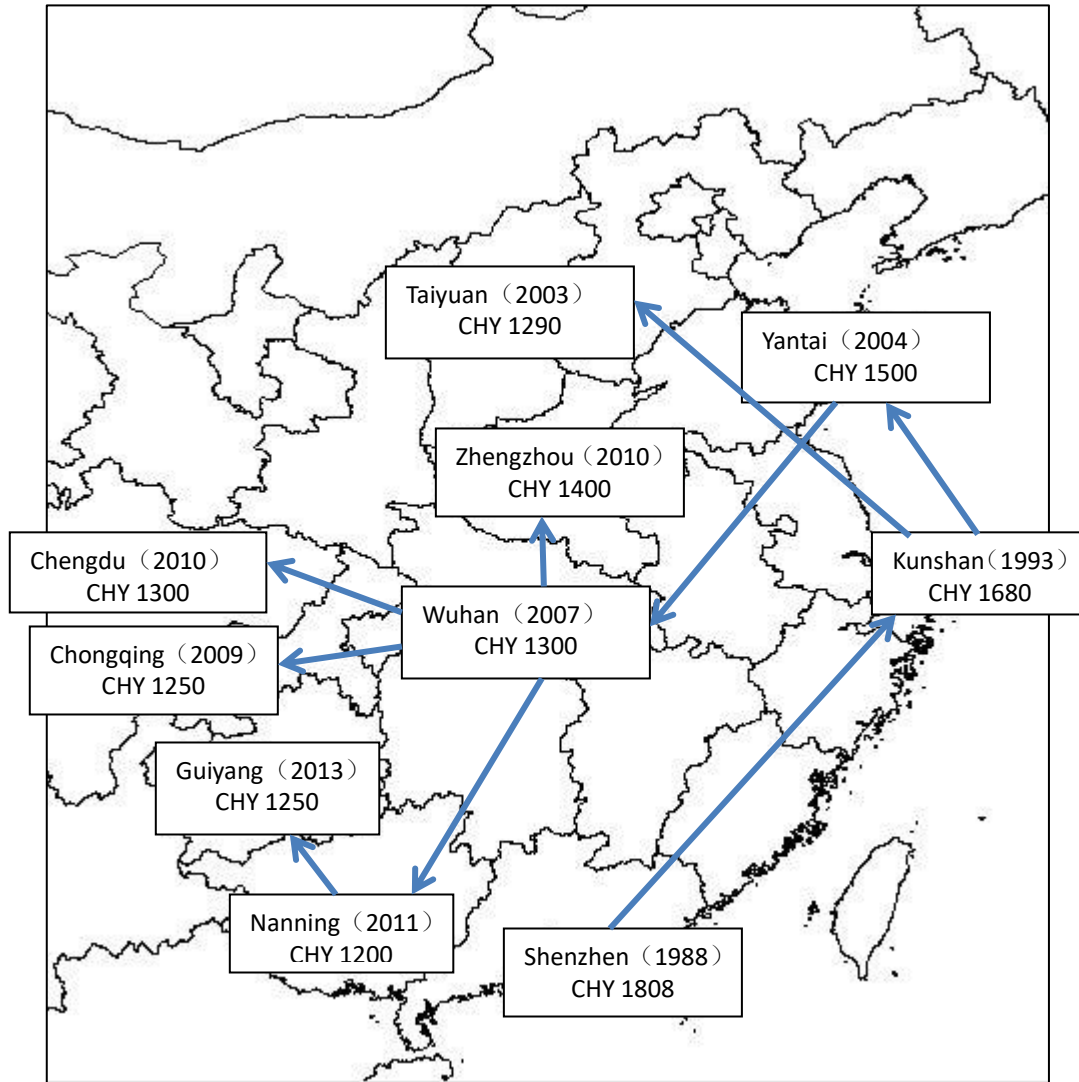
$$Q_i = AC_i^\alpha L_i^\beta K_i^\gamma e^{\varepsilon_i} \quad (6.4)$$

Among them, Q, C, L, and K represent output, capital input, labor input, and R&D input; A is a constant, α , β , γ represent the output elasticity of capital, labor, and R&D inputs, respectively, and ε is a random error term. For OEM⁶⁸ manufacture companies like Foxconn, the R&D input in operations is negligible. The variable K can be replaced by “R&D input” to “Government input.” Under the law of the market economy, labor and capital outputs are relatively stable, and the differences and unpredictability of local government investment will affect the layout of enterprises. Enterprises tend to rely on the administrative intervention of local governments to reduce their production costs.

Based on the production function, Foxconn's choice of transfer investment sites mainly considers labor input, capital input, and local government input. By comparing the minimum wage standards of cities with Foxconn factories, it can be found that Foxconn has a declining trend in low-wage standards from the eastern to the central and western regional sites. In other words, overall, the low wage standard has a certain impact on Foxconn's location (See Figure 6-4).

⁶⁸ OEM production is called Original Entrusted Manufacture, also known as fixed-point production, commonly known as foundry (production). The basic meaning is that brand producers do not directly produce products, but use their key core technologies to design and develop new products and control sales channels. The original processing equipment's specific processing tasks are commissioned by other manufacturers of similar products through contract ordering.

Figure 6-4 Foxconn's location route and minimum wage standard in major factories



Note: The wage in the box is the local minimum wage set by the government in 2014.

Source: Foxconn Technology Group and Government work documents

The material cost of Foxconn's site selection is mainly the land cost, including land transfer fees and development costs. In China, local governments with land transfer approval often sell at “zero land price” relying on their monopoly of the primary land market (Lihua and Yanguo 2005). It is similar to the enterprise income tax reduction and exemption, internalized as an important part of “government input.” In the competition game among local governments, the local governments in the low dominant position often adopt the way of “building nests and attracting phoenixes” to attract enterprises to settle down, that is, to provide factory buildings and infrastructure. Because the local government has great discretion in terms of labor cost, industrial land supply, and cost, the investors require more consideration of the local government's policy on minimum wage standards for employees, industrial land prices, and preferential policies for supporting facilities.

6.2.3 Analysis of choosing Zhengzhou, Henan province

6.2.3.1 Background

Since 2008, with the rapid increase of global consumption of electronic products, orders for Foxconn Group are also increasing year by year. The production line of the original Shenzhen factory is not enough to meet the production demand of the relevant client companies.⁶⁹ The demand for the fast delivery of products by the client company requires that Foxconn's new production line must be able to put into operation in a short period. To this end, Foxconn in the process of site selection, formulate a clear production schedule, requiring local governments to fully cooperate with the construction of the plant and supporting facilities.

6.2.3.2 Factory area

Foxconn Zhengzhou Science Park has three factories in Zhengzhou. They are Hongfujin Precision Electronic Zhengzhou Co., Ltd. in Xinzheng Free Trade Zone of Zhengzhou Airport Factory, Futaihua Precision Electronic Zhengzhou Co., Ltd. in Zhengzhou Economic Development Zone Export Processing Zone, and Fuding Precision Electronic Zhengzhou Co., Ltd. in Zhongmou County Factory. Among them, Zhengzhou Economic Development Zone Export Processing Zone Factory was registered in July 2010 and put into operation in August 2010. The factory building and supporting facilities of the first phase of the plant area were completed within 4 months.(See Figure6-5,Figure6-6)

⁶⁹ Although after 2012, Apple began to distribute the assembly and production business to other foundries, affecting Foxconn's order quantity; but in addition to the acquisition of 20% of iphone6 orders in 2014, Foxconn acquired 80% of iphone6 orders and all orders for iphone6 plus.

Figure 6-5 Satellite image Foxconn Zhengzhou science and technology park. in Xinzheng free trade zone of Zhengzhou airport



Source: Made by the author based on google map.

Figure 6-6 Hongfujin Precision Electronic Zhengzhou Co., Ltd. in Xinzheng Free Trade Zone of Zhengzhou Airport Factory



Source: Foxconn Technology Group

6.2.3.3 Local Government Actions

In addition to the short production time, Foxconn also made specific requirements for the supply of transportation and labor. The government made active cooperation in the following three

aspects.

I. Land and construction support

In response to Foxconn's short-term production requirements, Zhengzhou local government set up a high-level leading group to make active support, and administratively arrange for the government staff to “peer-to-peer” with Foxconn for 24 hours. The designs of factory buildings were carried out by mobilizing state-owned design and construction units by the principle of “Construction while designing.” Governments at all levels are required to “special task” in the face of the construction and approval of Foxconn factory areas. For the relocation of the original factory buildings or villages, even forced demolition was used to ensure that Foxconn will smoothly put into operation in a short time.(See Table 6-1)

Table 6-1 Local government actions in the construction process

Government Actions
The “Foxconn Technology Group Zhengzhou Investment Project Coordination and Promotion Leading Group” was established. The governor was in charge, and all the departments of the city were dispatched to dock and coordinate related work. Also known as the “Province Project.”
The employees rotated in 24 hours in 16 days. The constructions of the factory were three shifts. The original factories were relocated by administrative means to move out enough workshops. With the city's engineering equipment to meet the needs of the Foxconn plant, “borrowed” unique specifications of cables and air compressors from the city subway construction site.
The Export Processing Zone Management Committee prepares office facilities for Foxconn, and Foxconn's managers can go directly to work as soon as they come.
In the factory area of the bonded area, the government organized three state-owned construction companies, Henan Yijian, Henan Wujian, and Zhengzhou Yijian, to evacuate, renovate and build the original factory buildings. The government helped Foxconn find staff dormitories around the factory area. Customs branches specializing in Foxconn can be set up in the bonded area to handle customs clearance business for 24 hours a day; the customs department arranges the subordinate units to dispatch excellent staff, set up a “workgroup” to serve Foxconn alone, arrange specialized personnel to dock Foxconn, and implement “nanny service.”

II. Transport infrastructure

The local government coordinated the opening of 26 international all-cargo routes and opened two international weekly freight trains.

III. Labor

In the context of labor shortage in manufacturing enterprises, Foxconn as a labor-intensive company, the supply, and cost of labor has become an important factor in Foxconn's site selection and construction, and an important means for local governments to strive for Foxconn. As of July 2017, the factory in Zhengzhou has 250,000 employees and is the world's largest iPhone assembly

plant. Foxconn has great pressure to recruit workers. The government's response to the labor factors of Foxconn's site selection is mainly to coordinate the handling of labor relations between enterprises and workers so that the government often “biased” the employers. The government's “administrative means directly intervene in the recruitment of enterprises” and “the construction of Foxconn employees' living facilities” are the most typical behaviors. (See Figure 6-7)

Figure 6-7 Zhengzhou Foxconn Workshop



Source: Foxconn Technology Group

Local government intervention in labor relations is mainly reflected in helping enterprises to recruit workers, specifically in the aspects of administrative recruitment, assessment institutionalization, and financial subsidies. The government used the administrative means to help Foxconn enterprises to recruit workers, and the offside intervention in labor relations caused the unfairness of the labor supply market. In order to compete for labor resources, local enterprises have to raise the corresponding wage standards. In 2018, Zhengzhou Airport District, where the Foxconn Zhengzhou Park is located, implements the minimum wage standard of CHY1,900 in the administrative area of Henan Province. The Foxconn recruitment brief clearly states that the basic salary is CHY 2,100 and the average comprehensive income is CHY 3,200 to CHY 4,800.(See Table 6-2)

Table 6-2 Administrative intervention in Henan during the recruitment process of Foxconn⁷⁰**Local government's policy arrangement for recruiting in Foxconn**

In June 2010, the Henan Provincial Government introduced the relevant preferential policies for Foxconn's recruitment: "1. Employment introduction subsidy policy. Subsidies shall be granted according to the standard of CHY 200 per person and shall be charged out of the special funds for employment. 2. Training subsidy policy. Free vocational skills training and vocational training subsidies are provided to those who are employed in Foxconn, and they are charged out of the special funds for employment. 3. Employment or subsidy policies. Give each person CHY 100 per month of employment or living allowance, up to CHY 600, and shall be charged out of the special funds for employment."

In August 2012, the Henan Provincial Government Governor's Office meeting decided that the government would assist Foxconn in recruiting 200,000 workers. This task was assigned to 18 prefecture-level governments in the province, and counties and cities that could not complete the recruitment task would be criticized.

At the beginning of August 2012, the Henan Provincial Government decided to pay a monthly subsidy of CHY 200 to the newly recruited Foxconn workers, which will be distributed until the end of 2012. If 200,000 people are recruited by the end of the year, Henan Province will have to pay hundreds of millions of yuan in financial subsidies.

Local governments have resolved the recruitment tasks to some professional intermediaries. Once the local governments send the workers to the Foxconn factory, Foxconn will give the employment referral fee to the labor bureau account according to the standard of CHY 400 per person.

In September 2010, Henan Province issued relevant documents requiring secondary vocational school students to go to Foxconn for an internship⁷¹.

Secondly, in response to the shortage of labor during the peak production period of Foxconn products, Foxconn often arranges a large number of interns to work in the factory area with zero hourly salaries. In order to meet Foxconn's production requirements, local governments require the vocational colleges and universities to sign an internship agreement with Foxconn and send students to Foxconn for an internship. The so-called "intern" is an 8-hour daily line operation and 3-4 hours of overtime work. Foxconn takes the name of student "internship" and treats it as a low-cost free labor force. Moreover, many of the student workers are under 16 years of age (See Table6-3). For the new factory, Foxconn transferred the supporting facilities of Foxconn staff living area to the local government to ensure the stability of employees. (See Figure 6-8 and Table6-3)(See Appendix V)

⁷⁰ "Foxconn Technology Group Recruitment Training Staff Mobilization Coordination Meeting" (June 2010), "Henan Provincial Employment Promotion Office Respondents on Foxconn Recruitment Training Staff in Henan" (June 2010), "On Establishing Zhengzhou Notice of Foxconn Project Promotion Service Working Mechanism (December 2011), "Zhengzhou City Promotion Foxconn Project Promotion Work Conference" (January 2012); "Notice of Henan Poverty Alleviation Office on Foxconn Science and Technology Group's Recruitment and Training of Staff in Poor Areas of Henan Province"(January 2012)

⁷¹ Emergency Notice on Organizing Secondary Vocational School Students to Practice in Foxconn Science and Technology Group (Yu Television [2010] 89)

Table 6-3 some schools send records of students to Foxconn

School	Number of students
Puyang Entrepreneurship Training Center	More than 1000
Henan Business Electronic School	More than 100

Figure 6-8 Xinzheng Foxconn Airport Staff Apartment Dormitory Area



Source: Foxconn Technology Group

6.2.1 Summary

As a global enterprise of labor-intensive OEMs, Foxconn Enterprises is bound to be constrained by the macro-institutional and socio-economic environment of the investment area. However, when investigating and researching Foxconn, it was found that its location decision is no longer limited to factors such as land, taxation, and production infrastructure. It is more inclined to consider regional logistics, labor supply, and project launch time. In the process of attracting Foxconn enterprises to settle down, Henan local government has made great efforts in its investment process. In order to reverse the difference in logistics costs with the eastern coastal areas in export trade, the government will often fully promote the application and construction of comprehensive bonded areas and transportation facilities. In the context of the shortage of migrant workers, local governments intervened in the labor market by administrative means to attract Foxconn to settle down. The specific manifestations include administrative recruitment, the

institutionalization of assessment, and financial subsidies, and even “do not do” for Foxconn’s illegal employment. On the other hand, in order to meet the demand of Foxconn for short-term production, the local government has actively supplied labors and material resources, and through the powerful administrative means and substantial financial support, to save the time cost of enterprise production. From the perspective of Foxconn's corporate layout, Foxconn tries to transfer its social responsibility initially attached to the enterprise to the local government.

Table 6-4 The supporting facilities provided by the government for the staff park.

Facilities around Foxconn Zhengzhou IT Industrial Park	
Accommodation	Jinxiu Zaoyuan District, Yukang New Town ⁷² , Jincheng Apartment, Foxconn Xiangrui Plaza Project ⁷³ Miss you smart choice holiday hotel project Thirteen kindergartens, seven primary schools, five junior high schools, and one senior high school
Food and Restaurant	Zhengzhou Port District Dennis Shopping Center Yukang New Town Commercial Street, Working Commercial Plaza, Henan Dingsheng Dynasty Hotel Management Co., Ltd. Foxconn Logistics Support Base Project
Transportation	Bus 600, 621, 622 and 623
Recreation & Entertainment	Venus Commercial and Cultural Life Square Project; Foxconn Community Service Center Complex Building.
Hospital	Henan Public Health Medical Center; One General Hospital, 11 Community Medical Service Centers and 27 Community Health Service Stations

6.3 A company

6.3.1 Basic information

A company is a medium-sized foreign-invested enterprise with a registered capital of CHY 5 million. It is a pure e-commerce investment project from Hong Kong, which integrates R&D, production, and online sales of Baby carriage and dining chairs. In 2012, it was stationed in Alibaba, Tianmao Mall⁷⁴, Jingdong⁷⁵ and Amazon, with annual sales of tens of millions of yuan. The

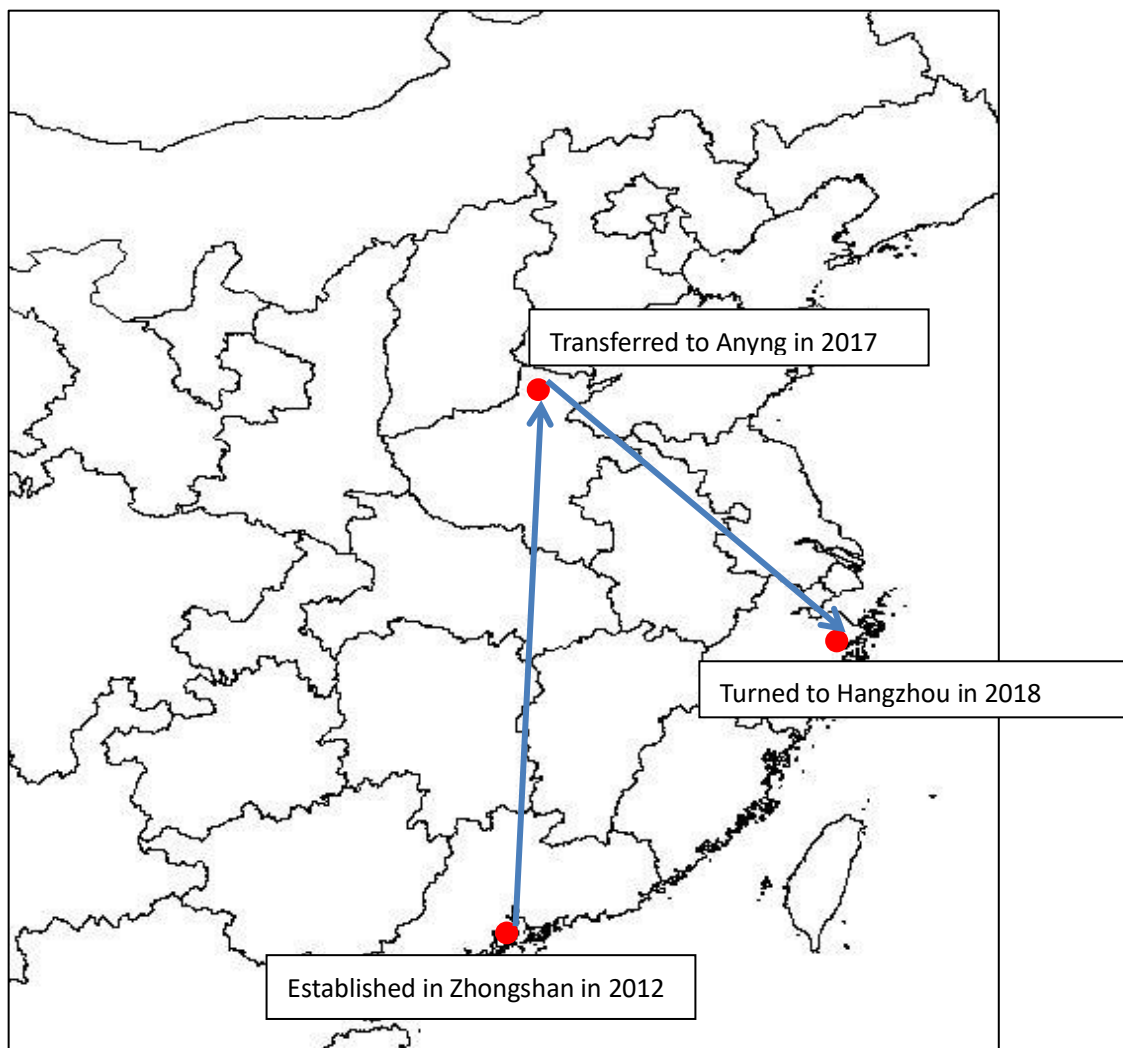
⁷² Yukang New City is a supporting living area for Foxconn Zhengzhou IT Industrial Park, a key project for the construction of affordable housing in Henan Province, and a key project for Henan Province and Zhengzhou City. Since the start of construction in September 2010, more than 100,000 employees have been admitted to Foxconn. The land used for the project was not allocated. After Foxconn participated in the bidding and auction process, the government built and directed the lease to Foxconn. In addition to enjoying the policy of affordable housing, the government also promised to repurchase these houses in the future.

⁷³ The Foxconn Xiangrui Plaza project is the first batch of Class A key construction projects in Henan Province in 2014. The first phase mainly builds Foxconn staff apartment buildings and their supporting commercial facilities.

⁷⁴ Tianmao is the largest enterprise-to-consumer shopping website in China. It is separated from Taobao and operated by Zhejiang Tianmao Network Co., Ltd. Most of them are composed of well-known brand flagship stores and authorized franchised stores. Zhejiang Tianmao Network Co., Ltd. is one of the subsidiaries of Alibaba Group.

company was initially established in Zhongshan City, Guangdong Province. From the beginning of the reform and opening up, Zhongshan got the FDI projects from Taiwan and Hong Kong, and started for foreign OEMs, forming a cluster area for the baby carriage industry. Taking into account the complete industrial chain of Zhongshan, the city has facilitated factors of production, has a gathering area for the baby carriage industry, and is a coastal city that has been open for many years. Therefore, A company chose to establish the company in Zhongshan in 2012. By 2017, with the expansion of the factory scale, the problem of recruitment difficulties in the Guangdong area was widespread, the labor costs raised too fast, and the company considered moving inland and chose Anyang, a city in northern Henan. However, in less than one year, the company abandoned Anyang and moved to Hangzhou in the Yangtze River Delta (See Figure 6-9).

Figure 6-9 A company's route to transfer investment



⁷⁵ Jingdong is a major B2C shopping website in mainland China, formerly known as 360buy, founded by Liu Qiangdong. In 2014, Jingdong Group was listed on the Nasdaq Stock Exchange.

Source: Made by the author

6.3.2 The reasons for choosing to invest in Anyang.

Through an investigation to corporate executives, it was found that the company chose Henan Anyang based on the following considerations:

6.3.2.1 Government's Preferential Policy for FDI

Land rent subsidy was given to enterprises entering Anyang Industrial Park, which was free of rent in the first year and CHY 5 per square meter in the second and third year. Tax incentives can be implemented for five consecutive years. At that time, the company got free office space of more than 500 square meters. As for the company's factory area, the local government completed the plant and plant road, communication, water, electricity, and other infrastructure projects. The company can repurchase it within 5 years or the project for the lease of the factory by the investor can be subsidized by the government according to the criteria of exemption from the previous three years and halving in the next two years. (See Figure 6-10, Figure6-11)

Figure 6-10 The office space provided by the government for the company (1)



Source: Made by the author

Figure 6-11 The office space provided by the government for the company (2)



Source: Made by the author

Company is unlikely to get land in Guangdong, and factory rents are increasing year by year. Moving to Anyang, not only can the company get the ideal land, but the government also builds the factory, which is the investor's object. Moreover, company executives have established very good personal relationships with local government officials through various channels.

6.3.2.2 Cost and labor

In recent years, the shortage of migrant workers, the wages of workers in Guangdong have risen rapidly, the labor advantage has become less and less visible, and labor costs are testing the survival capacity of enterprises. Not only are the wages of workers rising, but with the continuous improvement of various social security measures such as housing provident fund pensions in developed areas of Guangdong, the cost of enterprises is also increasing. The strict supervision of workers' five insurances and one housing fund⁷⁶ has placed a heavy burden on the company. In the factory in Henan, not only the rents of the factory is much lower but also free to use, and the wages of the workers are much lower, probably only a thousand yuan. Moreover, for good investment

⁷⁶ Five insurance and one fund refers to the employer's several kinds of security benefits to workers, including old-age insurance, medical insurance, unemployment insurance, industrial injury insurance and maternity insurance, and housing accumulation fund. The five insurance and one fund in social security are compulsory. However, in underdeveloped areas, due to inadequate supervision, some companies do not implement it.

projects, Henan Anyang has provided very favorable conditions in terms of land and policies. Compared with coastal areas, the regulations of compulsory policies related to workers' welfare are relatively loosely implemented.

6.3.3 The reasons that the company chose to leave for Hangzhou.

However, this investment failed after one year. The company decided to withdraw from Anyang, the northern part of Henan in May 2018 and turned to the Yangtze River Delta. The reasons are as follows:

6.3.3.1 The local business environment is not good.

In addition to tax audits, tax assessments, safe production, environmental supervision, food and drug safety inspections, other government departments that have relevant regulatory relationships may go to the enterprise for inspection, and the company is tired of responding to various inspections. Some government departments and their staff have set obstacles to project construction, and there are corruptions in varying degrees and villagers around enterprises often interfere with the operation of the company, which led to a significant increase in the company's invisible operating costs, and there is no rest time, because executives and staff need to socialize, executives are exhausted. For example, the villagers used excuses to repair the drainage pipes and set up roadblocks at the company's entrance, which made the company's trucks unable to pass. Repairs can only be made after some benefits have been obtained.

6.3.3.2 Cannot recruit the right persons

Companies cannot recruit the right people at all, and even in the peak season, the company has only to train relatives and friends of employees to take up positions. When the company recruited e-commerce product managers and searched for a well-known recruitment website, it found that only seven people would like to work in the city where the company is located, but the web pages that people would like to go to Beijing, Shanghai and Hangzhou are more than hundreds. The company called the 7 people one by one and found that two of them were traditional industry product managers and applied for the wrong position. Another person who just graduated from college did not have any experience, just thought that the job name looked good. That is, only 4 people can be chosen at that job position. After the phone notification, two people have not come. After the former company editor left, because the company really cannot recruit people, has to only

recruit a fresh graduate student and a new customer service. These two people are entirely ignorant of e-commerce. However, when they work, the edited text is unreadable; a text message needs to be edited to remind the customer to sign and receive, and it takes three days to complete. After the online business was handed over to the new customer service, the customer complaint service was of poor quality, and a refund was requested. It is difficult for companies to survive because there are no suitable employees. There are too few local universities, and the students trained do not match the market demand. E-commerce is a very new industry. Local colleges and universities cannot train relevant students through market adjustment. Students with abilities choose to go to big cities.

As for the workers on the production line, the main consideration of the company's internal migration is that the cost of workers in Guangdong is too high, and the cost of workers in Anyang is low. However, when Anyang's factories recruited workers, it was found that although Anyang's wages were relatively low, and the workers were relatively surplus. However, the local labors are not well paid because of lack of technology. Skilled workers and young people have chosen to go to the developed coastal areas for employment. As a result, the local workers are older, and the youngest age of the recruited workers is 35 years old, and the oldest is 50 years old. Skilled technicians can hardly be recruited. Even if there are young people, their opinion of career choice has changed a lot. Attracting them with wages alone is difficult. They pay more attention to personal development, free time, and easy work. Most are reluctant to be workers on the assembly line.

6.3.3.3 No supporting industrial chain

Since the company moved to Anyang, it has not only symptoms of incompatibility in the labor force and the local soft environment. The factory has been in operation for more than half a year, but every day the company worries about whether the raw materials can be in place on time. Some raw materials needed by the factory cannot be purchased locally, but can only be transported from Guangdong, which brings much trouble to the factory's production. There is no decent supplier in the local area, which is a very worrying issue. The stock of raw materials is often very tight. If the Guangdong area cannot send the raw materials in time, the production line will have to stop. The upstream and downstream supporting products of the industrial chain cannot keep up, which is invisibly adds a lot of logistics costs.

After the production in Anyang, it was found that there was no supplier support even in the

product packaging. In Guangdong, it just takes half an hour to get things done by a phone call. In Anyang, the factory has to wait for a week. In Guangdong, the supporting factory talks about two hours of the industrial circle and delivers goods to the door within two hours. A week's arrival is fast for the factory in Anyang.

6.3.4 Summary

In order to reduce costs and pursue maximum profits, A company chose to come to Anyang, Henan Province. Even though the local government has offered a variety of effective preferential policies, investors still failed because the local government and business environment are not good, the quality of labor is not up to the standard, the factors of production cannot be adequately supplied, and the industry is not matched. Under the painful experience and no solution, the company tolerated the loss and chose to give up. When choosing to go to Hangzhou in the Yangtze River Delta, the company learned the lesson, conducted in-depth research in Hangzhou for several months, and finally turned to Hangzhou.

6.4 B company

6.4.1 Basic information

B Company is an enterprise jointly run by the overseas Chinese and their families. It has made a series of investments in agriculture and grain and oil processing trade in China, especially in the agricultural province of Henan.

6.4.2 The reasons why the company chose to invest in Henan

The executive of the company has identified three points. First, Henan is located in the Central Plains, the distance to the central and eastern parts of the country is the same, and it can quickly carry out logistics. Second, investing in Henan agriculture is because Henan has historically been a traditional agricultural province. Henan has the premise and soil for developing agriculture and has sufficient production capacity and environment. Third, the deep processing of agriculture and agricultural products made by Henan people is relatively safe, which has not triggered major food safety incidents in the whole country, and the investment environment is guaranteed, which shows that Henan people have a sense of awe and respect for food and agriculture.

6.4.3 Dissatisfaction

However, in the early stage of the company's investment, it also encountered many obstacles,

CHAPTER 6

even almost withdrawal. A subsidiary of Company B suffered from the interference of local government in 2001. When registering in the business administration department of government, the municipal administration for industry and commerce said that there was one less approval from the foreign economic and trade commission; the foreign economic and trade commission said: please go to the planning commission; and the planning commission said that the trade and industry bureau should do it. So repeatedly, the three departments kicked the “ball” for ten days. Helplessly, the company found a city leader, asked if there is no lack of procedures or not, the city leader immediately held a coordination meeting, these problems completed in three days. Local villagers also set up barriers. During the construction of the factory, at the gate of the factory, the villagers around the company set up a “toll station” and asked the company to pay CHY 50 for every cart company pulled out. When the company loads and unloads materials, the surrounding villagers require that only the villagers surrounding can load and unload. The market price is CHY 35 to CHY 40 per car. However, the villagers stipulate that they should be paid not less than CHY 60.

6.5 Summary

This part summarizes the key factors that led the three companies to invest or abandon Henan in the interview process in Table 6-5.

Table 6-5 Summary of the reasons that affect the FDI of three companies

Main regional factors of FDI	Foxconn	A company	B company
Government policy	√	√	
Land cost	√	√	
Labor cost	√	√	
Labor supply	√	√	
Transport infrastructure	√		√
Industrial advantages			√
Quality of labor		×	
Political and business environment		×	×
Factors of production		×	

Note: Laying √ and × are both important factors affecting investors, but √ indicates positive factors, and × indicates negative factors.

Comparing the factors listed in the above table with the results of statistical analysis, we found that the regional factors affecting FDI in Henan are the same. FDI can be influenced by preferential

government policies, labor supply, labor quality, factors of production, costs, infrastructure, local political and business environment, and other factors. The biggest attraction for investment in Henan comes from the abundant labor force, low labor cost and strong government support. However, the ultimate impact on the success of Henan investment lies in the high-quality skilled workers and highly educated talents, the formation of industrial chain and the local business environment to some enterprises.

Based on the investment scale, different industries in which the investment is located will have different levels of emphasis on requirements. Distinct industrial investors view the factors of attracting investment in different regions from their standpoints. The scale of foreign investment can lead to a large degree of flexibility in the government's support and even make the government have blind eyes to some illegal and non-compliant phenomena to the large-scale enterprises, forming a legal vacuum. Moreover, these are the key reasons why even other regions cannot replace them and choose to invest in Henan. This kind of government support can even wholly ignore other adverse factors. After understanding the company's case, it can be found that although Henan has a large population; it is difficult for companies with quality requirements for workers to find suitable employees. Under the local industrial situation in Henan, industrial agglomeration and related industrial chains cannot be formed, making it difficult for companies to survive even when they come to Henan. Foxconn, which does not require labor quality, also has considerable pressure on the demand for labor, and even requires government administrative intervention.

Moreover, the situation of “rule by man” in Henan is too severe, and the problems using standard procedure sometimes cannot be solved, so investors must turn to the leadership of the special high-level. Moreover, if the factories are built in rural areas, the local clan forces and customs will also cause severe interference. Therefore, when the political and business environment is not good enough, which can even defeat all other favorable factors and form buckets effects.

CHAPTER7 CONCLUSIONS AND IMPLICATIONS

After the empirical quantitative analysis and qualitative analysis of the interview, this chapter will take the previous analysis in the thesis as the basis, and then summarize those according to the purpose of this research. In addition, according to the results of the analysis of research conclusions and interviews, follow-up implications are made to the relevant investment promotion government departments or units of Henan Province. Finally, it illustrates the limitations of this thesis and suggestions for future research directions.

7.1 Research conclusion

The main purpose of this thesis is to analyze the factors affecting the entry of FDI into Henan, which is consistent with the conclusions of most empirical studies and theories. However, because of the particular regional situation and development stage of Henan Province, the main factors affecting FDI inflow have also appeared some unique characteristics and discoveries different from the past. The importance of market, openness, infrastructure, and the cost are reflected in the empirical analysis. There are some more research conclusions as follows:

- I. Henan's inward FDI has developed rapidly since 2002, and the utilization level of FDI is in the leading position in the central provinces. It has the following characteristics: Henan Province's FDI mode is dominated by wholly foreign-owned. Henan Province's FDI focuses on the secondary and tertiary industries, and the primary industry's FDI is relatively scarce. Henan Province's sources of FDI are mainly from Hong Kong, Macao, Taiwan, Macau, the United States, and Singapore, and the sources of investment are concentrated, especially from Hong Kong. The actual scale of FDI in Henan Province varies widely and mainly located in Zhengzhou and Luoyang. The differences in natural resources and social and economic conditions in various regions of Henan Province are pronounced. Capital and human capital are often attracted to Zhengzhou and Luoyang, where development potential is excellent, and capital returns are high. The utilization of FDI in Henan Province is still in a low position in China, and the gap between Henan Province and Eastern China is apparent. However, FDI in Henan Province has developed rapidly, and now it has been in the leading

position in six provinces in central China. Henan's FDI development is also profoundly influenced by the international environment and national policies. Under the guidance of China's reform and opening-up policy, and after joining WTO, the amount and level of foreign investment attracted by Henan have made rapid progress, but the two international economic crises have dealt a heavy blow to FDI.

- II. In recent years, due to the rapid economic development in China, people's demand for living materials and production has attracted market-seeking FDI. This type of investment is different from export-oriented FDI, which is produced to meet the needs of the host country's local market. Although Henan's economy is still not developed enough compared to other provinces, it has a large population, and its potential market capacity has become an important factor in attracting FDI. As China's economic development progresses from east to west and the level of economic development in the central region increases, the market potential will be huge in the future, and it will become the most favorable factor for competing with other regions for international capital.
- III. The coefficient of openness in different periods is significantly negative, which is contrary to previous research conclusions. Local protection and closed market environment have formed barriers for investors outside. Once enter in the region and bypass these obstacles, the companies can form regional monopoly advantages, thus attracting FDI of related interests to enter the region. It is a phenomenon of abnormal development in some less developed areas. In any case, the open environment facilitates foreign access to international market information and international trade, while also allowing a region to gain excellent management experience, reliable and efficient sales channels, and advanced technology. Opening to the outside world is more important for attracting foreign investment in Henan. It will enable Henan to make more rational use of foreign capital and accelerate the pace of opening up to the outside world.
- IV. The agglomeration effect has become an important factor affecting the location choice. Because the central city belt opened earlier, the scale of attracting foreign capital is much larger than other areas, which makes it form agglomeration economy earlier. Once the agglomeration economy has been formed, it can be strengthened continuously by exerting its external scale economy, and then affect the subsequent agglomeration. Therefore, the

agglomeration economy is a factor that must be taken into account in all regions.

- V. An essential factor that Henan attracts FDI is a large number of cheap labors in Henan province. Although the advantage of labor cost is weakening now, Henan still has a comparative advantage compared with other regions. The population can reflect the local labor potential in the future, to avoid the shortage of labor force and the sharp rise of labor costs after entering an aging society.
- VI. At present, manufacturing is the largest sector in Henan to attract FDI inflow, and labor-intensive industries are still the main target of investors. Low labor costs are an important resource for manufacturing companies. In the early days, labor-intensive industries were concerned with low labor costs and paid little attention to the quality of labor. However, with the continuous development of Henan's economy and industrial upgrading, FDI projects in Henan have begun to shift from low-processing, labor-intensive sector to capital and technology-intensive sector. Therefore, the quality of labor has begun to be required in recent years, and the cost of labor, as the indirect measure of labor quality, start to have a positive effect on FDI inflow. High-quality labors can promote technology transfer and production expansion of multinational companies, reduce training costs, and accelerate product localization. It is necessary to increase the quality and technical level of employees by increasing investment in human capital, thereby increasing the level of foreign investment and the average scale of the investment.
- VII. Industrial structure factors are significant in the empirical results. The improvements in the development level of the primary and secondary industry have played notable roles in promoting the attraction of FDI inflows in Henan province. However, the tertiary industry has not formed a comparative advantage, and it is difficult to attract FDI inflow to promote the development of the tertiary industry in Henan.
- VIII. The construction of infrastructure has an important impact on FDI. The natural endowment of investment sites and the available supporting facilities determine the foreign investment. However, when the infrastructure reaches a certain level, although investors still have requirements, it is no longer a critical factor in determining whether to invest.
- IX. The formation of Henan's factors of production capacity is mainly due to China's reform and opening up over the past 20 years. It is the continuous advancement of opening up to the

outside world that eliminates the policy barriers to the inflow of factors of productions into the region. The continuous reform of the domestic system has created the market and institutional conditions for the concentration of factors and constitutes a powerful gravitational field that gathers the broad factors of production in various countries. The free and efficient flow of high-quality production factors such as goods, capital, technology, and labors are the integral parts of establishing a good investment environment to attract foreign investment.

- X. In the analysis of questionnaires, in the political environment, local policy incentives and local government services are more important. In the economic environment, the size of the economy is more valued by investors. Among the factors of openness, although there is no significant effect on FDI, the local export quota is more critical. Among the factors of production, the most crucial factor is the supply of labor force. In terms of cost, land costs and local wages explain this factor better. In infrastructure, the convenience of road transportation is more considered by investors.
- XI. This study makes a comparative analysis of the factors affecting FDI in three areas of Henan Province. Among all the factors, investors pay more attention to the openness of the central city belt, emphasize the infrastructure, cost, and factors of production in northern Henan, and attach great importance to the infrastructure, political environment and the factors of production in southern Henan.
- XII. In the descriptive analysis of the questionnaire, the company believes that the top five variables affecting investment are the “local land cost,” followed by “local road traffic is convenient,” “local export quota,” “local water supply” and “local communication facilities.” Infrastructure factors have become a prerequisite, although it has not a significant impact on FDI in the subsequent empirical analysis.
- XIII. Through factor analysis and cluster analysis, it is found that all the companies surveyed can be divided into cost-oriented type, transportation infrastructure-oriented type, and factors of production, general infrastructure-oriented type.
- XIV. Among the different enterprise characteristic variables, “enterprise size” and “investment time” have significant differences in the impact of FDI factors. The greater the investment in the enterprise, the higher the emphasis on the political environment. For

companies with more employees, they are more concerned about the political environment. For companies with long investment times, they not only pay attention to the political environment but also have requirements for infrastructure.

XV. Enterprises in the primary industry and the tertiary industry are more optimistic about future investments. Enterprises with a Chinese cultural background are more likely to enter the investment areas, but the gap caused by this culture will gradually decrease.

XVI. The biggest problem in attracting foreign investment at present is that the rule of man is too severe, and there may even be violations. In approving the investment, governments at all levels still follow the methods of project determination and investment allocation formed in the planned economy period, lacking the feasibility study of adequate supervision. The determination and implementation of the project are outside the supervision of the law and government system. Moreover, it has become a unique factor to attract foreign investment. Due to the restrictions of regional and economic development, Henan's investment environment is not comparable to that of coastal cities. The disorder of the local market, engineering safety, and the safety of employees 'lives and property are threatened by local clans, which makes the investors stay away. It has also become an important factor affecting FDI sustainable investment.

XVII. Although there are incentives to encourage investment, the less ideal business environment, unable to form a decent industrial agglomeration and supply chain cannot make enterprises survive.

7.2 Implications

This study explores the factors affecting FDI from the perspective of investors, in addition to discussing the importance of various factors. Based on the research results, this thesis proposes the following suggestions:

- I. Differences in economic development may bring many economic and social problems. Based on the basic fact that the difference in the use of FDI between Henan Province is very significant, Henan Province should deal with the unbalanced problem that the difference of FDI utilization among regions in Henan Province. The government should give preferential policies to the use of FDI backward areas. The development of backward areas has an excellent institutional environment, which can promote the sustainable and

balanced development of the FDI in Henan.

- II. Improve the level of human resources and give full play to the advantages of labor costs. As a province in the central part of China, Henan has a large population density. Moreover, apart from Zhengzhou, the economic development level of each city is relatively low, so the cities and regions may continue to maintain the advantages of labor costs in the future. In order to give full play to this advantage, Henan Province must accelerate the establishment of a sound labor market and increase the enthusiasm of free labor mobility within the region. At the same time, due to the low level of urbanization in various cities of Henan Province and the large surplus of rural labor, local governments can provide technical training and information exchange for rural laborers through the establishment of rural labor training mechanisms and human resources markets, and promote the flow of rural labor. In addition, with the increasing demand for high-skilled talents from foreign-invested enterprises, local governments should focus on cultivating the introduction of technical skills and knowledge-based talents, while maintaining the advantages of labor costs, improving the quality of human resources for the practical introduction and reserve good human resources for the actual introduction of foreign capital. Local governments can start from the following aspects: First, local governments should provide skills suitable for rural labor learning in accordance with the different cultural levels of rural labor, and enhance the competitiveness of labor in the job market. Second, local governments should strengthen their investment in the education of local colleges and universities, encourage foreign-invested enterprises to cooperate with colleges, universities, and various training institutions, and cultivate high-quality talents with the innovative ability and broad vision. Finally, while introducing foreign talents, local governments should pay attention to retaining local talents to prevent brain drain due to the imperfection of local wage level and social security system, to upgrade the quality of human resources.
- III. Henan Province has a large population and abundant human resources. In particular, FDI in Henan Province is mostly concentrated in manufacturing and service industries, which require a large number of human resources. In addition, human capital has gradually become important competitiveness in attracting FDI in Henan Province in recent years.

Although foreign businesspeople pay more attention to the low labor cost of Henan Province, they also begin to demand many high-quality talents. Therefore, the government should increase investment in human resources. The key to solving this problem is to create a good environment for the training and use of talents, attracting people with government policies and related industries. Government policymakers should improve the tertiary school education and increase the enrollment rate of junior high school and senior high school students entering higher education schools, and encourage them to accept higher education to make education sector responsive to attract more investment. The education policy should be focused on guiding and encouraging more pupils into higher educational school and cultivates high-level talents who meet the requirements of an open economy. With the deepening of the actual introduction of foreign capital in Henan Province, the insufficiency of human resources, especially the shortage of senior talents, has increasingly affected the actual ability of Henan Province to utilize foreign capital. At present, Henan Province is rich in labor resources, but it is very scarce to have talents who can deeply understand the domestic and foreign economic development trends, deeply grasp the international economic practice, grasp the opportunities of international industrial transfer and actively promote the development of the open economy. More efforts should be made to attract high-tech talents with keen awareness, good at exploring international markets, familiar with the international economic operation, familiar with international trade, and proficient in English.

- IV. The reason for foreign investment in Henan is mainly due to the stage of local economic development and the industrial economic environment of the whole country. Therefore, with the economic development and industrial upgrading and optimization, the relevant local policies should be adjusted accordingly in order to more adapt to the development and entry of foreign investment.
- V. Infrastructure construction is a hard condition for Henan Province to attract FDI. The development level of specific industries such as logistics, communication, and financial deepening is the essential condition for Henan Province to develop an export-oriented economy. Logistics capability is directly related to the cost of foreign investment in Henan. Henan Province should take the construction of a hard environment as an important

project for attracting investment, take a long-term view, formulate comprehensive development plan, and implement it systematically. At the same time, accelerate the construction of transportation networks such as roads, railways, and aviation, especially the construction of expressways, form large arteries connecting the central and western regions. Moreover, strengthen the construction of power grids, communications, computer networks, posts and telecommunications, tap water and sewage treatment projects and the construction of three-dimensional highway, railway, and civil aviation transportation networks connecting Henan with the central, eastern, western, southern and Northern regions.

- VI. The agglomeration economy has a significant impact on the actual use of FDI in Henan Province. Therefore, Henan Province government should stress the construction of industrial clusters, such as the construction of science parks and the investment in local industrial clusters. Encourage large multinational companies to invest in Henan Province. Multinational companies have advanced technology, management modes, and operating mechanisms. The development of multinational companies in Henan can improve Henan's agglomeration effect and promote Henan's investment attraction. Encourage multinational companies to cooperate and compete in local enterprises in Henan. Establish a win-win competition model between foreign-funded enterprises and local enterprises, and jointly establish and develop Henan's characteristic economic industries.
- VII. It can be seen from the current situation of the use of foreign capital in Henan Province that Henan's use of foreign capital is concentrated in the secondary industry and the tertiary industry; especially the secondary industry accounts for almost half of the total foreign investment. In contrast, the proportion of foreign investment in the primary industry is much smaller. Henan is a large agricultural province, so the comprehensive development of the economy requires not only the development of the secondary industry dominated by the manufacturing industry and the tertiary industry dominated by the service industry but also actively guides foreign investment in the primary industry. It also encourages foreign investment in modern manufacture and service industries such as high-end manufacturing, high-tech industries, new energy, and energy-saving industries, modern logistics and cultural industries, and continues to encourage foreign investors to

invest in labor-intensive industries that meet environmental protection requirements. Optimize the land allocation, prioritize and guarantee the construction land for foreign-invested investment projects that come to Henan, and provide more special conditions for foreign investors investing in the primary industry in Henan. Reduce the related expenses of foreign-invested enterprises, and guide foreign investors to invest in profitable industries in terms of cost.

- VIII. Many literature studies and historical experience have proved that the higher the level of opening up to a country or region, the easier it is to attract FDI. Judging from the ratio of imports and exports in Henan over the years, the openness of the Henan market has been relatively low. China has been reforming and developing for many years. Now it is an open society, and international trade has developed rapidly. In order to improve the ability to use foreign capital and make rational use of foreign capital, Henan must first increase its opening up, relax investment forms, and encourage foreign investment in Henan.
- IX. It is necessary to strengthen the construction of local governments at all levels in Henan Province. Improve the quality of foreign affairs personnel, strengthen the construction of the legal system, maintain a fair competition order, and create a fair and transparent market environment for foreign investors in Henan Province.
- X. Over the years, Hong Kong, Taiwan, Macao, the United States, and Singapore have been the sources of FDI in Henan, especially Hong Kong, Macao, Taiwan. Most of the foreign businesspersons in these areas have a direct blood relationship with Henan Province. They came to Henan Province to seek ancestors and contribute to the economic construction of their hometown. Henan Province should make full use of this advantage to develop the plentiful historical and cultural advantages of Henan Province and attract more foreign businesspeople to invest in Henan Province. However, with the rapid development of Henan's economy and the increase in foreign investment, Henan should extend the target of attracting investment to more countries and regions, especially developed countries such as Japan, Britain, and France. Expand the source of foreign investment in Henan, so that Henan does not depend on a specific country or a specific region. Avoid the Henan economy being too volatile due to the volatility of the economy of a particular country or

region.

- XI. The questionnaire descriptive analysis results show that “local land cost”, “local road transportation is convenient or not”, “local export quotas”, “local water and power supply”, “local communication facilities”, “high industry concentration (industrial park)”, “local air transportation is convenient or not”, “local quality of labor”, “the same types of manufacturers in the region” and “local wage” etc.. Ten variables are the main factors to attract FDI. Among the ten variables, there are 4 variables of infrastructures, 3 variables of factors of production, and two variables of costs. Moreover, according to the empirical evidence, the cost factor has the highest coefficient and significant positive relationship to FDI. Factors of production also have a positive effect on FDI. Therefore, if we want to attract more FDI in the future, under the premise of ensuring the perfect infrastructure, the government needs to improve the projects on cost items and factors of production as soon as possible, to attract foreign enterprises to invest and set up factories.
- XII. Through cluster analysis, this study initially divided the clusters with different factors into three clusters: “cost-oriented type,” “transport infrastructure-oriented type” and “factors of production and general infrastructure-oriented type.” Compared with the investment capital, it can be concluded that small-sized and medium-sized enterprises with less than 5 million and between 5 and 30 million are classified as “cost-oriented type”, and the medium-sized and super-large enterprises with between 5 and 30 million and more than 100 million are “transport infrastructure-oriented type”, while medium-sized enterprises with between 5 and 30 million are classified as “factors of production and general infrastructure-oriented type”. According to the simple comparative analysis, if the government wants to attract more foreign investors, it can improve and provide the specific requirements of clusters that attach importance to different factors according to this simple classification.
- XIII. Under the guarantee of the development of the second industrial company, the government should carry out industrial upgrading and adjustment, encourage traditional advantageous industries, and actively promote the development of tertiary industry companies.
- XIV. The advantage of attracting foreign investment by relying on low factor cost is

gradually disappearing, while the demand for the broad market, excellent human capital, and rational allocation of factors of production has initially taken shape. To bring these advantages into full play, the key lies in speeding up the reform of the system and mechanism, creating a more rule-by-law and internationalized rule system and institutional environment, and making them had better participate in the international division of labor and competition.

XV. A good investment environment should not be a relationship-oriented “rule of man” environment, but a fair, transparent, and the standardized rule of law environment. In a society that depends on human feelings, relationships, or a leader to maintain, the operating costs of enterprises tend to increase. Drabek and Payne (2002) pointed out that in a world of global capital, the investment will flow to areas where entrepreneurs believe the investment environment is transparent. The rule of man replaces the rule of law, and administrative intervention replaces market behavior. Such political performers are impairing the transparency of the investment environment.

7.3 Research Limitations

This study uses empirical analysis and a qualitative analysis method, which leads to some research limitations due to the restrictions of the two research methods.

- I. The economic data of Henan Province in this study are mainly derived from official data such as the Yearbook of the National Bureau of Statistics. However, in the early stage of China's statistical work, the statistical caliber varies significantly in different periods, and the collection of FDI and other data began in the 1990s. The lack of official data in some areas has led to the limitation of research on economic data. I had to choose to start from 1999.
- II. The purpose of this study is to explore the main regional reasons for FDI entering Henan Province. 18 cities in Henan Province are taken as the research objects, and the research period is only 18 years, which result in the small sample size in the panel data analysis in Chapter IV, and makes it impossible to carry out a regional comparative study.
- III. The interview survey can only be conducted for a small number of investors, but it is limited by the lack of investigation time, the high position of the interviewee and the working time is not fixed. Some of the respondents are often not in the office or company, and the

investment is a major strategic decision of the company. It will involve sensitive information within the company, so ultimately, it is impossible to conduct a more in-depth case study to obtain content that is more detailed.

IV. In the investigation and research interviews with investors, it was found that the national-level policy regulations have significant impacts on local FDI, especially the side supply and environmental assessment policies⁷⁷. Therefore, in addition to considering these new policies, follow-up researchers can also subdivide the influential variables. During the time of doing research, it is in the critical period of national environmental impact assessment and side supply policy. Relevant national policies affect some enterprises. Therefore, whether the willingness of these companies to invest has been affected, which leads to biased responses to the questionnaire, may also be the place for comparison or verification in the follow-up study.

7.4 Research in the future

Given some of the issues and conclusion mentioned above, there are more areas for improvement in future research. As for the follow-up research, this thesis puts forward the following directions:

- I. In the future, as China's economic and political environment gradually improves, and Internet usage increases, the economic data provided by China's official website will be more and more immediate and sufficient. Information transparency will be more conducive to the collection of empirical data. More specific research variables in Henan can be explored, and the Panel Data can be compared and analyzed among the north, middle, and south regions of Henan and the follow-up researchers can get better empirical results.
- II. Although the results of quantitative analysis of the relevant variables in this study are significant, these factors should be the essential factors driving enterprises to choose the areas, but panel data analysis usually needs an indicator to represent a factor, some factors cannot be more refined. Therefore, research can find the appropriate refinement variables for quantitative analysis in the future.

⁷⁷ In April 2016, the Ministry of Environmental Protection issued Guidelines on Actively Playing the Role of Environmental Protection to Promote Supply-side Structural Reform, focusing on the three key tasks that environmental protection can play an active role in supply-side reform, namely, capacity removal, cost reduction and shortcomings compensation.

- III. After screening, there were only 201 valid questionnaires in the study. The number of samples in the primary industry was only 13. Therefore, in the future, in addition to expanding the research samples, the research scope will be extended to different industries for comparative analysis.
- IV. Different industries have different characteristics. Therefore, follow-up researchers can conduct market segmentation on the industry to explore the needs of different industries, and so the results will be more helpful to the government in attracting investment and the construction of the corresponding industrial park.
- V. Research on FDI entering Henan and interviewing investors in subsequent questionnaires is an after-the-fact study. Regardless of whether it is before or after the study, it is crucial for the entry of FDI. Therefore, after the research proves the relevant influencing factors, the follow-up research should continue to explore the issues decided beforehand.

APPENDIX I
CHINA'S EDUCATION STRUCTURE

APPENDIX I

China's education structure

Age (Years)	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
School Year				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
	Pre-primary		Primary						Lower Secondary school				Upper secondary school		University/College					
									Vocational secondary school ⁷⁸		Ordinary upper secondary School									
	Nine years basic compulsory education												Non-compulsory education							

Note: Made by author

⁷⁸ Secondary vocational education differs from ordinary high school education in that it is part of vocational and technical education, including general secondary vocational schools, technical schools, and vocational secondary education. Its main purpose is to export primary and secondary technical personnel and skilled workers for the society.

APPENDIX II
DATA

APPENDIX II

The amount of FDI inflow in different regions in Henan province

Unit: \$10,000

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	20111	166	201	3144	659	418	4773	5605	1996	973	6038	994	1451	792	287	1137	540	242
2000	9211	1094	1178	4209	176	202	4626	1067	1851	1785	5929	1408	782	723	966	818	1530	444
2001	7140	1306	846	1085	1211	789	4246	4384	460	3143	4403	1895	863	1110	946	640	244	1150
2002	9156	1048	1856	1827	864	1243	3693	3936	3447	2059	3416	2120	3349	1800	1552	1187	770	1353
2003	15741	1494	967	2670	3109	1223	4538	2996	2088	734	4981	4199	3492	1318	1799	1968	1052	1780
2004	24202	1802	8900	3443	1873	1406	4563	6321	2925	3159	6597	5758	3811	2303	3429	2438	2577	1860
2005	33549	2306	11429	4368	2832	3023	6016	9353	3681	4260	7652	7208	4809	9226	3379	4562	3134	2374
2006	61396	3148	21197	5809	4756	3970	10013	12141	4632	6508	9506	13824	6704	3108	4583	6015	4409	2807
2007	100112	5207	63673	9090	7461	5512	12605	15884	6017	8817	17068	18707	8419	4459	6021	7273	5764	4075
2008	22010	11520	14650	12140	13720	4890	12910	12680	4420	10090	5190	6870	11050	14220	5480	12490	6130	4460
2009	26371	14070	17620	13630	16630	6510	15610	15290	5060	12170	6230	8490	13530	15910	6020	15190	6890	4970
2010	190015	12882	120475	16390	14887	22481	32902	28832	9001	21277	32315	39849	20111	10385	16694	15763	12550	7860
2011	310000	23451	176800	30768	25838	35903	53056	48767	15748	35901	42791	63149	34187	16804	28673	28982	22103	15288
2012	342898	36320	199251	37358	31573	44009	63600	59528	32001	43977	62066	74672	41702	24596	34961	36341	27020	19904
2013	332178	43898	222272	45318	38057	55783	74009	66181	38979	53113	70401	86857	50388	27649	42237	44241	31590	22508
2014	363002	51698	241025	36493	42839	66785	86988	72850	48717	59725	78897	95679	57264	30897	47822	48490	35392	28125
2015	382661	58807	255371	40633	49454	77067	95072	78735	57544	68090	85574	100817	57136	34346	49517	49052	36888	31873
2016	403305	62338	268798	43221	50076	81394	102289	82733	63301	71951	90032	106296	60228	36249	52415	52197	38879	33610
2017	405000	63647	269900	46635	50126	93824	109040	89695	64200	73000	90041	107900	60234	36393	53400	57021	39900	34100

APPENDIX II

Average annual exchange rate of RMB against US dollar

Year	RMB/US Dollar Exchange
1999	8.2789
2000	8.2795
2001	8.2774
2002	8.2766
2003	8.2770
2004	8.2767
2005	8.2765
2006	8.0702
2007	7.8073
2008	7.2996
2009	6.8367
2010	6.8281
2011	6.6215
2012	6.3001
2013	6.2897
2014	6.1428
2015	6.2284
2016	6.6423

APPENDIX II

Gross Domestic Product in Henan Province

Unit: 10,000 yuan (CHY)

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	6328600	2042100	3774500	2454800	2288400	741600	2599100	2110000	1781400	2592000	1408600	1471400	4849400	2601600	2401000	3129800	2515300	527600
2000	7283800	2262400	4227600	2664300	2522200	818800	2765600	2276100	2016700	2886600	1561400	1619300	5196600	2876500	2603800	3383800	2718700	578300
2001	8157600	2523500	4619900	2891700	2753800	906000	3032600	2550100	2164000	3201700	1722700	1727600	5741900	3170000	2611600	3670900	2955700	654400
2002	9139100	2659000	5277500	3139600	3069000	1000100	3334800	2859300	2334500	3529000	1883200	1854900	6204000	3415100	3063900	4031200	3197800	786800
2003	10741100	2820900	6701300	3560000	3537200	1162700	3693000	3400800	2612500	3963200	2055500	2120300	7156200	3375700	3457800	3903800	3308500	930400
2004	13352200	3251000	8802800	4553700	4515100	1485400	4502800	4492500	3137300	4892500	2588800	2576700	8786700	4508600	4319400	5016000	4273900	1146700
2005	16606000	4080100	11124000	5609900	5574600	1862400	5441600	5839700	3839800	6054700	3221400	3351800	10534300	5607800	5085600	5955000	5003600	1443300
2006	20134800	4752900	13336500	6754100	6460000	2216700	6399900	6991000	4562400	7185400	3802800	4121500	12030500	6509800	5883500	6777400	5719200	1810300
2007	24867500	5554400	15953200	8211600	8078200	2744300	7796800	8560000	5261400	8554000	4370200	5184200	13763300	7656700	6990300	7985400	6674800	2237400
2008	30039925	6893747	19196384	10677008	10360548	3423523	9494928	10315860	6572798	10620503	5502627	6542124	16364296	9313905	8667899	9841251	8129755	2883500
2009	33085053	7787245	20014846	11278100	11248807	3636276	9919801	10714238	6616319	11307471	5917024	7027459	17144914	9955475	9289974	10653712	9005247	3110000
2010	40408926	9271584	23202460	13108394	13155890	4291193	11899408	12459260	7754037	13164870	6804948	8744157	19533562	11437913	10918323	12283024	10537118	3434000
2011	49798455	10724197	27027571	14846148	14866057	5005192	14894078	14426241	8973433	15887419	7517001	10304485	22023132	13083722	12576828	14074894	12447731	4095100
2012	55497869	12070542	29811236	14957963	15668969	5457806	16197714	15513469	9896987	17161891	7971238	11273204	23407260	13972750	13973205	15747181	13735463	4399500
2013	62019000	13635447	31407596	15568788	16836494	6221183	17660960	17073608	11304789	18775574	8615355	11920868	24992201	15382197	15811632	17906548	15420210	4601000
2014	67769890	14920564	32845734	16371717	17918143	6821975	19179974	18443139	12536056	20872312	9411601	12400597	26755709	16976370	17573375	19920815	16912964	4804600
2015	73115210	16058404	34690273	16860060	18723480	7156528	19750287	19260785	13283410	21711562	9925895	12510383	28668156	18121623	18796676	20896975	18076928	4925443
2016	81139666	17551002	38201075	18251414	20298494	7717894	21669705	20950796	14495555	23777133	10819257	13258631	31149653	19891538	20378010	22638615	19729881	5389108

APPENDIX II

Economic growth rate in Henan province

Unit: %

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	9	9.8	7.8	7.6	7.2	8.6	3.4	-13.2	9.1	10.1	10.1	8	8.1	10.8	8.1	10.6	9.8	15.6
2000	11.1	9.6	9.4	7.6	8.7	9.7	8.1	8.7	10.3	9.4	9.5	9.2	7	9.3	9.4	9.1	9.7	9.4
2001	10.9	9.8	8.8	8.3	8.6	11.7	8.9	11.5	9.8	10.7	10.5	7	9.9	9.7	10.7	10.8	8	15.8
2002	11	7	11	8.9	11.4	12.6	9.9	13.5	9.5	10.7	10.3	8.7	9.7	9.3	14.9	9.6	10.2	14.2
2003	14.4	5.4	17.1	11.1	13.6	13	12.7	15	10.6	12.7	11.3	11.5	11.2	-0.6	8.7	-2.7	1.7	13.1
2004	15.7	10	16.9	15.7	15.7	15.9	14.6	20.5	14.4	14.5	13.6	13.4	15.6	21.9	13.8	14	15.1	15.5
2005	16	13.1	15.1	15.4	14.8	16.1	14.3	16.8	15	13.5	15.8	14.8	13.5	14.5	13	12.2	12.3	19.8
2006	16	13.4	15.7	16	15.8	17.7	14.7	15.8	15.9	14.9	15.3	16.9	13.6	13.5	13.8	12.2	13.2	16.5
2007	15.9	13	16.2	16.2	18.1	19.1	16.6	17	14.6	14.8	13	18.7	13.1	12.9	13.1	12.3	13.7	18.5
2008	12.18	13.14	14.36	13.65	13.15	13.49	13.93	12.55	12.96	12.55	13.35	15.08	12.09	11.44	12.21	12.29	11.83	14.8
2009	11.4	12.1	13.3	10.01	11.4	12.8	12.4	11.3	11	12.5	11.3	12.1	10	10.8	12	10.8	11.5	14.2
2010	13	12.2	13.3	11.2	13.5	13.4	14.6	11.9	11.4	13.6	14.7	15.2	11.6	11.1	11.6	11.1	11.6	12.2
2011	13.8	12.9	12.5	11.1	12.2	12.9	14.7	13.4	12.4	15.2	13.2	13.1	11.2	10.7	11.1	11.2	11.3	14.8
2012	12.20	11.12	10.00	6.80	7.40	10.90	11.40	11.20	12.10	12.20	12.10	12.00	10.10	10.80	10.50	10.60	10.40	11.6
2013	11.75	12.96	5.35	4.08	7.45	13.99	9.03	10.06	14.22	9.40	8.08	5.75	6.77	10.09	13.16	13.71	12.27	12
2014	9.4	9.5	9	7.3	8.7	10.1	9.3	8.82	10	9.3	9.1	9	8.5	9.2	8.99	9.1	8.5	10
2015	10	9.42	9	6.66	7.4	8	6.1	8.65	9.4	9	9.1	3.3	9	8.8	8.97	8.8	9	6
2016	9.34	9.05	8.79	8.38	8.15	8.39	8.13	8.67	8.22	8.93	8.86	8.22	8.85	8.69	7.79	8.6	7.51	8.21

APPENDIX II

Average wage in Henan province

Unit: Yuan (CHY)

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	8231	5404	6881	6680	6548	5286	5577	5099	7749	5567	5046	5740	5760	4987	5289	4475	5258	5481
2000	9017	5883	7478	6926	7629	6497	5982	5965	8955	5987	5429	6607	6166	5097	5788	4840	5691	6191
2001	10398	6496	8128	7915	8383	7197	6672	7109	9868	6807	6231	7481	6814	5611	6384	5235	6148	7430
2002	11966	7007	9472	9073	9183	8069	7366	8373	10778	7580	7012	8705	7614	6164	7111	5919	6884	8531
2003	13537	7702	10746	10367	10564	9176	8407	9608	12069	8610	7915	9906	8774	6921	8055	6331	7760	9668
2004	15024	8657	13030	12089	11988	10328	9513	10959	13356	9708	8917	11301	10161	8739	8930	7203	8553	10771
2005	16694	10121	14641	14536	13423	12044	10604	12407	14512	10684	10270	13649	11819	10197	10115	8051	9494	11747
2006	18861	11397	16376	16451	15040	13715	11887	14557	15744	12070	11129	16572	13435	12350	12449	9237	11033	13459
2007	23025	14434	19517	20098	18535	16741	14795	19036	19551	15601	14297	19871	16001	16879	15167	12759	14134	18234
2008	26478	15587	22882	25003	21495	18431	17271	20687	22712	18583	16408	23795	17847	18772	18413	16724	16966	19778
2009	29837	21232	26152	28435	24093	21130	19969	24487	24046	22813	18912	26695	20804	21653	21408	20549	18997	21992
2010	32778	24090	29908	31936	26775	25858	21969	26331	27151	26644	21108	30456	23308	24259	24706	23377	21490	24290
2011	35756	27447	33472	36741	29496	30265	25452	30385	32531	29854	25535	33628	26536	26193	26833	27228	24877	27519
2012	40472	26798	42397	40897	33922	34042	30285	34752	35193	33816	31736	39391	30448	30925	30491	32092	29194	32090
2013	44941	35320	40470	42493	34613	37581	33540	34316	37586	36022	34981	42935	36098	36656	34399	36536	32337	36108
2014	49756	35749	44484	44120	38876	37725	37867	39917	41747	41474	38715	44358	41172	44168	39809	39491	36363	40404
2015	52376	43077	45819	44470	40825	39187	40545	41768	43103	43655	41207	43870	42507	43241	40975	42566	39641	43554
2016	60373	48379	50076	46182	45125	41739	43872	45773	45647	48104	45616	45821	47209	47326	44968	46243	44425	48175

APPENDIX II

Total Investment in Fixed Assets in the Whole Province

Unit: 100 million yuan (CHY)

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	228.26	33.82	126.57	48.96	48.26	14.78	51.25	35.10	55.36	61.41	40.35	47.28	96.35	65.15	73.04	65.67	58.88	8.97
2000	246.78	38.76	121.01	50.21	51.72	16.99	65.30	50.23	70.33	73.94	45.46	56.73	113.64	76.13	92.80	78.41	62.79	10.96
2001	286.12	43.99	121.75	54.76	69.61	20.22	73.31	61.90	80.47	75.57	45.94	59.35	139.86	92.13	108.33	89.86	69.18	13.9
2002	332.08	48.32	144.99	58.87	80.66	25.43	98.78	72.00	89.53	74.92	49.60	58.70	157.97	103.57	116.35	104.63	76.43	24.48
2003	491.32	61.10	195.11	78.38	104.03	33.45	151.12	106.22	99.62	100.00	59.93	75.73	204.40	121.93	139.40	114.63	86.63	40.9
2004	613.30	83.36	330.27	113.64	153.69	49.05	218.22	183.34	130.91	162.69	71.34	109.21	267.17	158.35	184.45	155.86	108.04	59.36
2005	819.31	128.86	480.07	190.35	230.79	75.54	319.61	268.65	153.31	239.40	104.25	179.24	413.00	232.13	281.05	221.83	167.41	68.95
2006	1031.99	166.29	620.75	272.71	310.23	109.33	425.16	352.41	183.70	293.68	138.70	229.05	514.43	300.90	372.26	293.29	216.46	78.88
2007	1367.31	220.29	837.64	365.33	429.54	161.78	581.92	491.34	252.36	397.22	187.56	291.37	699.63	400.73	504.43	400.27	298.69	113.68
2008	1772.74	303.07	1105.53	421.14	566.54	206.19	767.43	630.11	334.59	524.74	246.19	402.78	895.84	530.36	659.66	530.46	425.82	137.33
2009	2289.08	406.22	1447.28	577.74	740.64	286.93	1018.31	803.60	434.56	678.37	323.99	553.31	1153.18	693.17	858.14	690.59	562.29	179.20
2010	2756.98	506.58	1768.80	712.94	894.69	356.27	1211.26	970.82	532.22	829.36	403.95	677.49	1389.43	845.66	1031.46	813.70	668.38	216.91
2011	3002.50	584.79	1860.54	815.17	925.35	339.51	1129.52	946.40	612.13	897.04	448.15	749.07	1476.39	827.35	1052.99	851.77	747.20	228.43
2012	3561.22	738.26	2294.02	1004.99	1080.53	415.67	1380.32	1120.21	738.96	938.40	526.79	925.54	1721.11	1023.50	1197.52	931.22	817.58	281.29
2013	4400.21	941.68	2588.98	1231.77	1328.62	512.01	1561.15	1374.04	941.89	1371.11	648.29	1138.03	2091.40	1246.79	1447.28	1151.55	1014.90	351.40
2014	5259.65	1135.63	2981.10	1449.17	1572.58	588.50	1841.93	1623.53	1115.78	1637.23	773.30	1327.57	2486.91	1493.89	1723.17	1375.44	1214.42	412.50
2015	6371.72	1354.45	3576.69	1627.39	1862.88	701.40	1964.95	1906.26	1324.34	1965.37	927.27	1548.97	2989.62	1768.73	2085.28	1693.73	1512.02	479.27
2016	6998.64	1526.63	4082.68	1732.73	2074.87	809.06	2006.86	2198.01	1523.28	2263.79	1060.42	1773.12	3395.49	1991.16	2217.70	1862.15	1692.71	544.60

APPENDIX II

Basic Statistics on Regular Junior Secondary Schools by City

Unit: person

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	306052	280466	325683	222894	295089	72867	317892	171679	219952	221197	136128	108098	580355	518557	349367	593457	320056	38170
2000	350447	296441	361778	240617	331360	83790	361090	191449	248470	245863	143977	123049	614291	589152	411302	635998	359478	41390
2001	400592	284966	384970	261256	336060	85419	363472	194799	254989	276686	143762	130109	605289	633102	445851	629424	411753	44033
2002	433423	300426	362890	278236	336039	86680	398843	195881	275281	281722	153862	136914	610560	627890	483084	648375	421497	46383
2003	456588	306570	348177	280727	307202	85632	401614	182694	283630	272446	160894	132302	562248	650737	497192	656053	411065	45156
2004	443788	294126	335153	269201	297238	85142	376709	187893	284061	257189	158373	131934	543200	653318	487454	660333	398341	43221
2005	406633	263201	336211	246231	278780	86673	340080	187003	274109	249500	147109	128504	514056	650185	458460	676100	417477	37989
2006	360455	235042	342467	224551	253961	85914	266696	187604	262962	234458	119934	119915	473168	608537	448018	695401	454890	32407
2007	320719	213144	327293	205352	230162	81977	240371	176870	230559	227716	110896	112276	428038	570420	424513	693561	450141	28013
2008	292430	213809	316512	184489	206782	78634	225040	168817	228773	214658	101548	104119	402682	523393	429099	674409	451278	25522
2009	274558	212066	305217	169566	202557	77299	237958	160354	215574	209359	108090	99785	404470	518596	419813	666620	435404	25242
2010	268783	210668	298765	165465	198562	78541	239334	159224	219825	194187	104932	96156	414682	502128	420910	656119	441081	24682
2011	273813	208059	291199	167970	199622	79703	244026	155969	221757	188302	105624	92065	423103	505532	414329	643781	439977	24949
2012	260738	168672	274446	132244	155301	84259	208489	153602	218795	170400	100864	86873	357577	355580	341636	534889	375079	25596
2013	290379	175293	267437	157171	194033	72843	224914	145241	163252	150434	89285	79808	367630	340942	299201	472351	335162	25117
2014	316205	190829	272087	162052	205562	76923	239133	147206	175428	156426	90655	77818	398398	346279	307695	461302	344134	25474
2015	327482	195552	275036	171050	213263	77204	247806	141967	178058	162904	91489	75160	422158	330362	311294	465720	337028	24570
2016	343980	204908	278975	188385	226356	77385	258468	132913	179703	173391	92469	72710	457918	328770	321724	459171	336995	24051

APPENDIX II

Basic Statistics on Regular Senior Secondary Schools by City

Unit: person

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	237540	82605	98466	59593	67174	16998	70541	59836	43817	46188	40807	33703	148965	88230	88084	103116	80902	17060
2000	240828	85931	102115	63833	71705	17943	79286	71493	50193	49873	41629	35506	157141	93518	90654	118031	80163	18314
2001	252668	87928	112421	66290	80889.5	19765	88552	68937	57338	68696	50060	40261	178846	91948	101838	123513	92020	15630
2002	285123	103844	138102	80604	95944	27498	121085	78768	71054	75379	56608	55885	224565	114832	136344	154663	115860	18476
2003	364308	116026	171921	83694	115088	36183	149269	87526	78447	101059	80778	62859	250095	130538	177396	177599	125421	26519
2004	420498	129955	192662	111940	121578	42169	168036	93650	102605	114745	73859	72055	264771	154445	216549	209139	138028	31313
2005	467553	144583	202485	126684	136174	41807	185521	99367	105215	124172	84874	82898	269521	203567	248601	194974	159271	32111
2006	486393	160704	249439	123192	142508	56143	196075.5	104218	137124	135116	97511	87368	283960	236466	277214	265473	189419	33460
2007	527244	165788	277631	130551	156073	56461	201294	107084	146381	155383	105182	91962	298798	270752	311593	286373	203396	30981
2008	540082	168894	218260	122740	162916	54594	188574	112161	151335.5	154032	110692	87745	286278	286253	307046	296549.6	223636	29731
2009	541667	163406	229688	124549	150733	58309	196007	122385	155427	178738	102401	101079	289196	302074	298618	289884.7	236122	26411
2010	543054	157169	224345	135260	141783	52786	184365	121979	157507	157390	92918	98278	286520	313593	307444	291819.7	268978	24315
2011	538109	171203	218239	131516	128381	55617	180533	123192	139587	155387	86508.25	90739	281873	322589	306940	293911.7	259100	23076
2012	503090	160612	212233	108455	110923	55004	169424	124256	131991	152269	82704.5	87927	257863	290527	262514	268149.8	238557	22303
2013	485063	142335	201185	116084	116364	55804	177561	115380	120709	144392	78634.75	85815	255223	254962	263884	284430	204789	21319
2014	542573	136408	205015	119398	118613	56361	171064	113658	117086	123229	74219	71332	252882	238464	243643	287074	214818	25469
2015	523698	139997	212218	117772	127025	56445	158816	113316	106714	113018	74142	67138	257164	223994	231771	291446	207440	27125
2016	567487	138618	218916	125104	132995	56745	154861	113778	110101	103789	74808	60248	264463	211423	242965	293501	211892	25698

APPENDIX II

Number of Student in Regular Institutions of Higher Education

Unit: 10,000 people

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	8.70	1.60	1.90	0.50	0.50	0.1	2.20	0.90	0.10	0.30	0.1	0.1	0.60	0.20	0.70	0.20	0.20	0.1
2000	11.90	2.20	2.60	0.70	0.80	0.1	2.90	1.20	0.10	0.50	0.20	0.10	1.00	0.50	0.90	0.40	0.30	0.1
2001	17.10	2.80	3.50	0.90	1.20	0.1	3.80	1.60	0.20	0.60	0.30	0.20	1.60	0.90	1.20	0.60	0.50	0.1
2002	21.40	3.40	4.40	1.30	1.50	0.10	4.50	2.10	0.20	0.90	0.50	0.20	2.10	1.20	1.50	0.80	0.70	0.1
2003	25.60	3.60	4.80	1.90	1.80	0.20	5.10	2.80	0.30	1.10	0.60	0.20	2.50	1.50	1.90	1.00	0.80	0.1
2004	32.50	4.40	5.60	2.70	2.30	0.30	5.90	3.60	0.50	1.50	0.70	0.30	3.00	2.20	2.30	1.20	1.10	0.2
2005	39.30	5.10	6.50	3.40	2.70	0.50	6.90	4.40	0.60	1.90	1.00	0.40	3.80	2.90	2.80	1.40	1.20	0.4
2006	44.40	5.90	6.90	4.00	3.10	0.70	8.00	4.80	0.80	2.30	1.30	0.60	4.00	4.00	3.10	1.70	1.30	0.60
2007	49.60	6.40	6.90	4.60	3.10	0.70	9.00	4.80	0.90	2.50	1.30	0.60	4.60	4.00	3.10	2.00	1.30	0.60
2008	57.04	6.98	7.68	5.27	3.62	0.83	9.87	5.47	1.08	2.81	2.25	1.14	5.24	6.34	4.34	2.54	1.59	1.04
2009	61.74	7.13	8.08	5.79	4.05	0.88	10.49	6.06	1.16	3.24	2.39	1.43	6.35	7.49	4.81	3.11	1.69	1.00
2010	64.94	7.35	8.22	6.18	4.79	0.99	11.51	6.89	1.21	3.43	2.55	1.53	6.67	7.71	5.37	3.84	3.03	1.26
2011	66.51	8.15	10.01	6.19	5.17	1.01	12.89	7.24	1.21	3.41	2.83	1.52	6.55	7.71	5.46	3.82	2.99	1.23
2012	69.82	8.16	11.89	6.15	5.69	1.05	14.09	7.86	1.16	3.45	2.83	1.50	6.72	7.68	5.57	3.92	3.07	1.09
2013	74.76	8.66	11.85	5.93	6.23	1.07	14.18	8.31	0.99	3.40	2.96	1.38	6.83	7.54	7.15	3.18	3.18	1.52
2014	78.32	12.01	12.42	5.65	6.72	1.14	14.31	9.38	0.81	3.46	2.56	1.28	7.04	7.76	7.68	3.48	3.32	0.88
2015	82.42	8.93	13.08	5.52	7.29	1.21	14.33	9.74	0.84	3.56	2.65	1.30	7.45	8.42	6.24	4.61	3.43	1.27
2016	88.93	9.12	10.90	5.79	7.83	1.38	14.68	7.40	1.12	3.87	3.08	1.40	8.04	9.11	6.87	4.23	2.40	1.06

APPENDIX II

The proportion of primary industry to GDP

Unit: %

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	6.10%	34.10%	9.90%	16.30%	23.10%	23.90%	26.50%	19.20%	19.90%	22.90%	26.80%	14.30%	32.00%	45.60%	37.20%	42.50%	37.60%	13.40%
2000	5.70%	32.00%	9.30%	15.10%	20.80%	22.50%	23.90%	17.20%	21.50%	21.10%	23.30%	13.40%	29.60%	43.40%	35.30%	39.20%	34.00%	12.40%
2001	5.47%	31.82%	8.60%	15.03%	20.42%	20.99%	23.32%	16.18%	21.76%	20.06%	23.26%	11.60%	29.43%	42.07%	27.73%	37.95%	32.65%	11.40%
2002	5.09%	30.39%	10.19%	14.19%	18.98%	19.46%	21.33%	14.78%	20.90%	18.98%	21.99%	11.23%	29.23%	40.42%	31.58%	32.71%	32.72%	9.20%
2003	4.47%	25.69%	10.16%	12.81%	16.90%	19.50%	16.72%	11.61%	16.35%	16.40%	17.45%	10.57%	27.00%	30.52%	27.79%	31.13%	27.46%	6.90%
2004	4.58%	28.10%	9.80%	12.89%	17.25%	20.10%	17.10%	11.53%	17.14%	17.21%	18.25%	10.48%	28.33%	35.13%	31.21%	35.63%	35.23%	7.40%
2005	4.36%	29.73%	9.93%	11.94%	15.86%	17.55%	16.36%	10.01%	16.27%	16.44%	17.93%	9.87%	26.18%	33.55%	29.58%	34.47%	34.01%	6.90%
2006	3.83%	27.60%	9.75%	10.87%	15.15%	16.10%	15.24%	8.88%	14.76%	14.80%	16.68%	8.94%	24.58%	31.85%	27.94%	33.20%	32.27%	6.20%
2007	3.19%	24.43%	9.03%	9.82%	13.85%	13.26%	14.20%	8.06%	13.69%	13.01%	13.60%	8.12%	21.95%	29.25%	25.87%	30.37%	29.01%	6.20%
2008	3.15%	22.29%	8.73%	9.50%	13.80%	12.43%	13.77%	8.11%	13.82%	12.61%	14.41%	8.37%	21.05%	27.34%	25.64%	30.30%	27.85%	5.10%
2009	3.12%	21.65%	8.68%	9.34%	12.65%	12.19%	13.29%	7.98%	14.17%	12.10%	13.30%	8.20%	21.40%	27.20%	25.28%	29.87%	26.17%	4.70%
2010	3.08%	23.65%	8.09%	8.75%	12.09%	11.38%	13.21%	8.13%	13.88%	11.39%	12.73%	8.01%	20.54%	26.19%	26.38%	29.77%	27.58%	4.60%
2011	2.64%	22.15%	7.54%	9.14%	11.79%	11.18%	12.58%	7.91%	14.32%	10.81%	12.63%	7.88%	18.88%	24.23%	26.24%	27.70%	27.31%	4.50%
2012	2.57%	21.35%	7.51%	9.75%	11.95%	10.65%	12.37%	7.89%	13.92%	10.36%	12.30%	8.03%	18.10%	23.13%	27.03%	26.52%	26.64%	4.67%
2013	2.37%	20.56%	7.92%	10.44%	11.83%	9.81%	12.02%	7.79%	13.15%	9.85%	12.48%	8.36%	18.02%	22.31%	26.53%	24.91%	25.54%	4.70%
2014	2.17%	19.11%	7.06%	10.21%	11.45%	9.30%	11.86%	7.42%	12.42%	8.85%	11.59%	8.98%	17.52%	22.08%	25.03%	23.05%	23.49%	4.60%
2015	2.06%	17.68%	6.81%	9.80%	10.86%	8.62%	11.28%	7.12%	11.86%	7.81%	10.73%	9.47%	17.50%	20.80%	24.17%	21.73%	22.27%	4.40%
2016	1.93%	16.39%	6.13%	9.68%	10.47%	8.03%	10.29%	6.39%	11.17%	6.83%	10.53%	9.31%	16.55%	19.42%	21.89%	20.21%	20.93%	4.32%

APPENDIX II

The proportion of secondary industry to GDP

Unit: %

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	50.30%	34.80%	53.60%	51.60%	44.80%	47.30%	38.60%	50.10%	57.30%	50.50%	50.20%	51.30%	43.40%	28.10%	32.40%	34.40%	36.50%	55.90%
2000	49.20%	35.40%	54.60%	52.40%	47.80%	48.60%	41.60%	50.60%	54.60%	52.80%	54.10%	52.00%	45.70%	30.20%	34.30%	37.10%	39.10%	57.10%
2001	48.87%	35.85%	53.88%	52.31%	47.75%	49.41%	41.91%	51.46%	53.82%	54.17%	54.20%	53.63%	45.86%	31.87%	38.69%	38.29%	39.97%	56.90%
2002	48.88%	35.94%	53.55%	53.27%	50.12%	50.54%	44.22%	52.63%	54.30%	55.41%	55.33%	53.78%	45.65%	32.85%	37.05%	39.14%	39.55%	62.00%
2003	51.85%	37.84%	56.77%	55.44%	53.85%	51.93%	48.94%	55.47%	59.22%	58.26%	59.06%	55.18%	48.67%	39.12%	39.81%	42.23%	43.14%	66.10%
2004	53.56%	37.73%	58.75%	58.16%	56.51%	53.66%	50.18%	59.84%	59.18%	59.34%	60.10%	57.58%	48.20%	38.24%	38.93%	40.88%	39.05%	69.10%
2005	52.56%	40.17%	58.29%	60.13%	57.50%	59.32%	51.53%	61.98%	62.77%	61.16%	62.28%	60.34%	50.12%	39.40%	38.04%	39.72%	38.50%	67.10%
2006	53.19%	41.63%	60.07%	61.67%	58.40%	60.53%	52.43%	64.19%	64.47%	63.00%	63.93%	63.67%	50.90%	40.38%	39.27%	41.04%	39.52%	69.80%
2007	52.86%	43.21%	60.79%	62.68%	60.38%	62.97%	53.47%	65.68%	65.14%	64.08%	67.01%	65.97%	51.93%	42.07%	40.35%	42.54%	40.82%	71.00%
2008	55.24%	45.32%	61.08%	65.22%	62.49%	65.81%	54.89%	66.85%	66.51%	65.63%	68.35%	66.94%	52.31%	44.67%	41.35%	42.77%	42.25%	73.60%
2009	54.00%	44.41%	58.31%	65.18%	60.14%	68.67%	56.35%	67.33%	65.58%	67.30%	68.88%	66.05%	51.06%	45.50%	42.45%	44.73%	42.69%	73.00%
2010	56.17%	43.21%	60.18%	66.33%	61.52%	70.37%	57.69%	68.65%	66.46%	68.51%	69.74%	68.52%	52.07%	46.52%	42.21%	45.42%	41.88%	75.70%
2011	57.72%	43.85%	61.29%	65.59%	58.75%	70.74%	59.13%	68.89%	65.00%	67.87%	69.14%	68.81%	52.98%	47.61%	41.63%	46.45%	42.59%	76.70%
2012	56.45%	44.18%	59.98%	60.89%	57.49%	70.47%	57.15%	67.46%	65.12%	67.02%	68.49%	67.99%	52.16%	46.75%	39.96%	47.59%	42.82%	74.78%
2013	55.96%	44.71%	57.74%	58.23%	57.08%	71.73%	56.59%	67.42%	66.18%	66.83%	67.80%	65.90%	50.60%	46.81%	40.45%	49.91%	43.77%	74.80%
2014	51.46%	45.44%	51.07%	53.72%	52.36%	67.37%	56.60%	61.80%	57.89%	60.76%	63.71%	62.52%	46.50%	43.33%	41.54%	51.52%	41.32%	74.20%
2015	49.29%	40.94%	48.86%	52.19%	50.55%	65.28%	49.76%	59.76%	56.55%	59.00%	62.92%	58.18%	44.26%	41.79%	40.18%	45.92%	40.08%	65.78%
2016	46.79%	40.62%	46.89%	49.04%	47.84%	65.21%	49.56%	59.28%	54.76%	58.82%	62.35%	56.49%	43.80%	41.42%	39.55%	45.95%	39.23%	64.97%

APPENDIX II

The proportion of tertiary industry to GDP

Unit: %

Year	Zhengzhou	Kaifeng	Luoyang	Pingdingshan	Anyang	Hebi	Xinxiang	Jiaozuo	Puyang	Xuchang	Luohe	Sanmenxia	Nanyang	Shangqiu	Xinyang	Zhoukou	Zhumadian	Jiyuan
1999	43.60%	43.60%	36.50%	32.10%	32.10%	28.80%	34.90%	30.70%	22.70%	26.50%	22.90%	34.40%	24.60%	26.30%	30.50%	23.10%	25.90%	30.70%
2000	45.10%	32.50%	36.10%	32.50%	31.40%	28.90%	34.60%	32.20%	24.00%	26.10%	22.60%	34.30%	24.70%	26.40%	0.31%	23.70%	26.90%	30.50%
2001	45.65%	32.33%	37.52%	32.66%	31.84%	29.60%	34.77%	32.36%	24.42%	25.78%	22.54%	34.78%	24.71%	26.06%	33.58%	23.77%	27.38%	31.70%
2002	46.03%	33.67%	36.26%	32.54%	30.91%	30.01%	34.46%	32.59%	24.80%	25.62%	22.68%	34.99%	25.12%	26.73%	31.37%	24.15%	27.74%	28.80%
2003	43.68%	36.47%	33.08%	31.75%	29.25%	28.57%	34.34%	32.92%	24.43%	25.34%	23.49%	34.25%	24.33%	30.37%	32.40%	26.63%	29.40%	27.00%
2004	41.86%	34.18%	31.45%	28.95%	26.24%	26.24%	32.73%	28.64%	23.68%	23.46%	21.65%	31.94%	23.48%	26.63%	29.86%	23.49%	25.72%	23.50%
2005	43.08%	30.10%	31.78%	27.93%	26.64%	23.13%	32.11%	28.02%	20.96%	22.40%	19.79%	29.78%	23.70%	27.05%	32.38%	25.81%	27.48%	26.00%
2006	42.99%	30.77%	30.18%	27.45%	26.45%	23.37%	32.33%	26.93%	20.77%	22.20%	19.39%	27.39%	24.52%	27.77%	32.80%	25.76%	28.21%	24.00%
2007	43.94%	32.36%	30.17%	27.50%	25.77%	23.77%	32.34%	26.26%	21.17%	22.92%	19.39%	25.90%	26.12%	28.68%	33.78%	27.10%	30.17%	22.80%
2008	41.60%	32.39%	30.19%	25.29%	23.71%	21.76%	31.33%	25.04%	19.66%	21.76%	17.24%	24.69%	26.64%	27.99%	33.00%	26.93%	29.90%	21.30%
2009	42.89%	33.95%	33.01%	25.48%	27.21%	19.14%	30.37%	24.68%	20.25%	20.60%	17.82%	25.76%	27.54%	27.30%	32.27%	25.40%	31.13%	22.30%
2010	40.74%	33.13%	31.74%	24.92%	26.39%	18.26%	29.10%	23.22%	19.66%	20.10%	17.53%	23.47%	27.39%	27.29%	31.41%	24.81%	30.54%	19.70%
2011	39.64%	34.00%	31.17%	25.28%	29.47%	18.08%	28.29%	23.20%	20.68%	21.32%	18.23%	23.31%	28.13%	28.16%	32.12%	25.85%	30.10%	18.80%
2012	40.98%	34.48%	32.51%	29.36%	30.55%	18.88%	30.48%	24.65%	20.96%	22.62%	19.22%	23.98%	29.74%	30.12%	33.02%	25.89%	30.54%	20.54%
2013	41.67%	34.73%	34.34%	31.33%	31.09%	18.46%	31.39%	24.79%	20.68%	23.32%	19.72%	25.74%	31.38%	30.88%	33.02%	25.19%	30.69%	20.50%
2014	46.37%	35.45%	41.87%	36.08%	36.19%	23.33%	31.55%	30.78%	29.70%	30.39%	24.70%	28.50%	35.98%	34.60%	33.43%	25.42%	35.19%	21.20%
2015	48.64%	41.38%	44.32%	38.02%	38.59%	26.09%	38.96%	33.13%	31.59%	33.19%	26.34%	32.35%	38.25%	37.41%	35.65%	32.35%	37.65%	29.80%
2016	51.28%	42.99%	46.98%	41.28%	41.70%	26.76%	40.15%	34.33%	34.07%	34.35%	27.12%	34.20%	39.65%	39.17%	38.56%	33.84%	39.85%	30.71%

APPENDIX III
QUESTIONNAIRE

APPENDIX III

Questionnaire

Hello, we are conducting a survey on the regional factors of the location selection of FDI in Henan Province. I would like to invite you to help me fill out this questionnaire in a few minutes. This questionnaire is anonymous. All data is only used for statistical analysis. Please feel free to fill it out. There is no right or wrong question option; please fill in according to your actual situation. Thank you for your help! Let's get started now!

I. Basic information of the company

Investment area	1. Zhengzhou 2. Kaifeng 3. Luoyang 4. Nanyang 5. Luohe 6. Xuchang 7. Sanmenxia 8. Pingdingshan 9. Zhoukou 10. Zhumadian 11. Xinxiang 12. Hebi 13. Jiaozuo 14. Fuyang 15. Anyang 16. Shangqiu 17. Xinyang 18. Jiyuan
Entry time	
Industry	<input type="checkbox"/> Agriculture, forestry and animal husbandry <input type="checkbox"/> Mining <input type="checkbox"/> Food and Beverage <input type="checkbox"/> Textile <input type="checkbox"/> Chemical <input type="checkbox"/> Plastic <input type="checkbox"/> Metal <input type="checkbox"/> Mechanical <input type="checkbox"/> Conveyance <input type="checkbox"/> Equipment <input type="checkbox"/> Electronics <input type="checkbox"/> House and Construction <input type="checkbox"/> Other manufacturing industries <input type="checkbox"/> Information service <input type="checkbox"/> Communication <input type="checkbox"/> Wholesale and retail <input type="checkbox"/> Logistics <input type="checkbox"/> Catering <input type="checkbox"/> Entertainment <input type="checkbox"/> Tourism <input type="checkbox"/> Trade <input type="checkbox"/> Finance <input type="checkbox"/> Other services
Investment registration fund	Investment amount _____ (please fill in the currency unit)
Mode of investment	Joint equity <input type="checkbox"/> Wholly-owned <input type="checkbox"/> Cooperative <input type="checkbox"/> Others <input type="checkbox"/>
Investment period	<input type="checkbox"/> Less than 3 years <input type="checkbox"/> 4-6 years <input type="checkbox"/> 7-9years <input type="checkbox"/> More than 10years
Average operating trend in the last three years (net profit growth after tax)	<input type="checkbox"/> Less than -21% <input type="checkbox"/> -20%--10% <input type="checkbox"/> -10%-0% <input type="checkbox"/> 0%-10% <input type="checkbox"/> 10%-20% <input type="checkbox"/> More than 20%
Source country/region	<input type="checkbox"/> Taiwan <input type="checkbox"/> Hongkong <input type="checkbox"/> Macao <input type="checkbox"/> Japan <input type="checkbox"/> Korea <input type="checkbox"/> United States <input type="checkbox"/> United Kingdom <input type="checkbox"/> Thailand <input type="checkbox"/> France <input type="checkbox"/> German <input type="checkbox"/> Italy <input type="checkbox"/> Australia <input type="checkbox"/> Spain <input type="checkbox"/> Netherlands <input type="checkbox"/> other countries _____
How many people does your company employ?	<input type="checkbox"/> 1-100 <input type="checkbox"/> 101-200 <input type="checkbox"/> 201-300 <input type="checkbox"/> 301-400 <input type="checkbox"/> 401-500 <input type="checkbox"/> More than 500
Chinese cultural background	<input type="checkbox"/> Yes <input type="checkbox"/> No

APPENDIX III

II. The basic information of the respondent

Name of company		Address	
Title in company	The Chairman <input type="checkbox"/> General Manager <input type="checkbox"/> Deputy Manager <input type="checkbox"/> Department Manager <input type="checkbox"/> Secretary <input type="checkbox"/> Other <input type="checkbox"/>		

III. The regional determinants of your investment (The reasons of location choice)

The existence of regional differences among various regions in Henan province. Please assess the regional determinants that you decided to invest using the following scale:					
1. Not at all important; 2. Slightly Important; 3. Important; 4. Fairly Important; 5. Very Important		1	2	3	4 5
Political environment					
1	Local social stability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
2	Local government incentives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
3	Local government service quality and sincerity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
4	Consists of local government policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Economic environment					
5	Average income of local residents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
6	Size of the economy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
7	Growth of the gross national product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Openness					
8	Local market openness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
9	Local export competitiveness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
10	Local export quotas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
Factors of production					
11	Local financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
12	Local supply of raw materials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>

APPENDIX III

13	Local supply of labor force	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Local quality of labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	The same types of manufacturers					
16	Support industry and related industry chain					
Cost						
17	Local land cost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	Local wage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Local transport costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Infrastructure						
21	Local water and power supply, quality and price	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	Local communication facilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	Establishment and operation of local related units for infrastructure service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	Local railway transportation is convenient or not	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	Local road transportation is convenient or not	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	Local air transportation is convenient or not	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

IV. What do you think when you choose to invest in this area?

1	How satisfied are you with this area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Do you continue to invest more?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

This is the end of this questionnaire. Thank you again for your patience to complete the questionnaire !

Questionnaire collection person name _____ Contact phone number _____

APPENDIX IV
STANDARDIZED RESIDUAL
COVARIANCES

APPENDIX IV

Standardized Residual Covariances (Group number 1 - Default model)																											
	Y2	Y1	X24	X23	X22	X21	X20	X19	X18	X17	X16	X15	X14	X13	X12	X11	X10	X9	X8	X7	X6	X5	X4	X3	X2	X1	
Y2	0																										
Y1	0	0																									
X24	0.335	-0.244	0																								
X23	-0.29	-1.049	2.026	0																							
X22	-0.271	-1.019	-0.644	0.832	0																						
X21	1.42	0.445	-1.302	-0.968	0.391	0																					
X20	-0.133	-0.323	-0.661	-1.588	-0.648	2.313	0																				
X19	1.49	0.234	-0.581	-0.6	-0.309	0.49	1.411	0																			
X18	-0.785	-0.854	-0.226	0.001	0.962	1.222	0.471	0.758	0																		
X17	0.083	0.343	-0.238	-0.466	0.259	0.342	-0.632	0.041	0.091	0																	
X16	1.143	1.074	-1.66	-1.318	0.522	0.417	-1.519	0.22	-0.013	-0.147	0																
X15	-0.541	0.389	0.403	-1.375	-1.09	0.692	-0.15	-0.314	-0.708	-0.709	-0.142	0															
X14	0.512	1.52	-0.084	-0.998	-0.571	0.206	-0.363	0.103	0.45	1.209	1.886	-0.471	0														
X13	-0.331	-0.557	0.859	-0.627	-1.64	0.489	0.321	0.259	-0.563	-0.532	1.027	0.139	-0.025	0													
X12	-1.22	-0.63	0.997	-0.874	-1.251	0.609	-0.669	-0.551	-0.107	-0.725	0.889	1.216	-0.33	-0.313	0												
X11	0.366	0.065	0.433	-0.472	-0.225	1.171	0.146	0.767	-1.132	-0.65	0.451	-0.074	-0.189	0.049	-0.062	0											
X10	0.608	0.077	1.395	-0.84	-0.753	1.799	1.481	-0.255	0.7	0.36	2.394	-0.822	0.853	0.306	-0.491	0.218	0										
X9	1.135	1.502	1.039	-0.815	-1.834	1.714	1.566	0.812	-0.652	1.114	-0.2	0.531	0.727	0.442	0.243	1.067	0.672	0									
X8	-0.611	-0.21	1.123	-0.904	-1.36	0.197	0.933	1.112	-0.788	0.823	-0.034	-0.144	0.137	-0.584	0.062	0.134	-0.121	0.007	0								
X7	-0.234	0.318	-0.015	-1.079	-1.248	-0.693	0.414	-0.365	-0.467	0.976	-0.48	-0.39	-0.05	-1.166	-0.521	-0.2	-0.228	-0.119	0.027	0							
X6	0.494	0.775	0.742	0.871	0.045	0.341	0.088	-0.273	0.82	-0.081	0.354	1.024	0.819	1.388	1.549	1.329	1.407	-0.105	0.376	0.666	0						
X5	-0.617	0.035	0.198	0.192	0.246	-0.013	-0.714	-0.547	0.132	-0.084	0.184	-1.06	-0.507	0.153	0.324	0.281	0.038	-0.345	0.419	-0.197	-0.07	0					
X4	-0.135	0.759	0.175	0.231	0.215	-1.059	-1.363	0.341	-0.702	-0.678	-0.316	-1.018	-0.884	-2.235	-0.579	-0.706	-1.253	-2.013	-0.533	-0.749	-0.247	0.133	0				
X3	-0.2	-0.872	0.541	0.221	-0.543	-0.648	0.219	0.409	-0.362	-0.237	0.55	-0.852	0.192	-1.374	0.692	-0.49	1.08	-1.113	-0.758	-0.459	0.828	-0.834	0.181	0			
X2	0.519	-0.086	-0.077	-1.035	-0.546	-0.676	0.184	0.738	0.246	0.02	0.02	-0.204	-0.362	-1.083	0.443	-0.847	0.669	-0.438	0.091	0.195	1.013	1.247	0.718	0.058	0		
X1	0.976	0.176	1.329	0.045	-0.605	0.158	1.235	0.588	-0.745	0.635	0.264	0.509	0.282	1.699	0.594	0.001	0.334	1.711	1.055	1.065	-0.335	-1.488	-1.27	0.392	-0.484	0	

APPENDIX IV

Standardized Residual Covariances (Group number 1 - Default model)																									
	Y2	Y1	X24	X23	X22	X20	X19	X18	X17	X16	X15	X14	X13	X12	X11	X10	X9	X8	X7	X6	X5	X4	X3	X2	X1
Y2	0																								
Y1	0	0																							
X24	0.511	-0.091	0																						
X23	-0.128	-0.912	0.434	0																					
X22	0.172	-0.592	-0.98	0.398	0																				
X20	0.562	0.366	-0.06	-1.015	0.511	0																			
X19	2.078	0.806	-0.493	-0.565	0.484	2.928	0																		
X18	-0.759	-0.872	-0.067	0.149	1.369	1.104	1.287	0																	
X17	0.091	0.305	-0.091	-0.331	0.646	-0.026	0.548	0.098	0																
X16	1.152	1.041	-1.527	-1.196	0.877	-0.968	0.684	-0.003	-0.169	0															
X15	-0.527	0.37	0.548	-1.239	-0.763	0.352	0.109	-0.705	-0.718	-0.15	0														
X14	0.523	1.501	0.04	-0.881	-0.287	0.071	0.47	0.451	1.2	1.878	-0.479	0													
X13	-0.318	-0.572	0.983	-0.509	-1.361	0.75	0.622	-0.56	-0.539	1.022	0.135	-0.031	0												
X12	-1.206	-0.65	1.15	-0.731	-0.909	-0.144	-0.109	-0.105	-0.735	0.881	1.208	-0.339	-0.317	0											
X11	0.387	0.048	0.601	-0.314	0.151	0.721	1.254	-1.125	-0.656	0.446	-0.073	-0.191	0.053	-0.062	0										
X10	0.627	0.061	1.547	-0.697	-0.414	2.004	0.182	0.706	0.354	2.389	-0.821	0.852	0.31	-0.49	0.228	0									
X9	1.147	1.473	1.15	-0.703	-1.654	1.814	1.031	-0.654	1.101	-0.211	0.529	0.724	0.441	0.241	1.067	0.673	0								
X8	-0.593	-0.239	1.259	-0.768	-1.143	1.233	1.378	-0.788	0.81	-0.044	-0.144	0.135	-0.584	0.061	0.137	-0.119	0.007	0							
X7	-0.221	0.289	0.104	-0.959	-1.056	0.678	-0.131	-0.468	0.963	-0.491	-0.392	-0.053	-1.167	-0.523	-0.199	-0.227	-0.124	0.029	0						
X6	0.508	0.748	0.575	0.681	0.01	0.166	-0.256	0.831	-0.087	0.351	1.024	0.817	1.388	1.548	1.331	1.409	-0.106	0.378	0.666	0					
X5	-0.601	0.001	-0.014	-0.047	0.201	-0.615	-0.525	0.144	-0.091	0.179	-1.061	-0.509	0.153	0.322	0.284	0.04	-0.346	0.421	-0.198	-0.071	0				
X4	-0.12	0.732	0.005	0.039	0.179	-1.283	0.359	-0.691	-0.683	-0.319	-1.019	-0.886	-2.234	-0.579	-0.704	-1.251	-2.014	-0.531	-0.749	-0.246	0.133	0			
X3	-0.169	-0.883	0.43	0.09	-0.499	0.4	0.52	-0.36	-0.245	0.543	-0.856	0.188	-1.376	0.688	-0.492	1.079	-1.118	-0.76	-0.463	0.829	-0.834	0.182	0		
X2	0.559	-0.088	-0.186	-1.164	-0.5	0.367	0.851	0.254	0.017	0.017	-0.203	-0.363	-1.082	0.443	-0.843	0.673	-0.435	0.098	0.199	1.02	1.256	0.726	0.06	0	
X1	1.004	0.167	1.232	-0.07	-0.567	1.393	0.685	-0.742	0.628	0.258	0.506	0.279	1.697	0.591	0	0.333	1.707	1.054	1.061	-0.334	-1.488	-1.269	0.383	-0.481	0

APPENDIX IV

Standardized Residual Covariances (Group number 1 - Default model)																								
	Y2	Y1	X24	X23	X22	X19	X18	X17	X16	X15	X14	X13	X12	X11	X10	X9	X8	X7	X6	X5	X4	X3	X2	X1
Y2	0																							
Y1	0	0																						
X24	0.757	0.156	0																					
X23	-0.034	-0.82	0.129	0																				
X22	0.363	-0.4	-0.788	0.141	0																			
X19	2.373	1.103	0.095	-0.349	0.964	0																		
X18	-0.754	-0.874	0.106	0.179	1.505	1.519	0																	
X17	0.089	0.298	0.075	-0.305	0.776	0.772	0.102	0																
X16	1.15	1.033	-1.377	-1.173	0.996	0.888	-0.001	-0.177	0															
X15	-0.526	0.366	0.794	-1.088	-0.573	0.361	-0.705	-0.722	-0.153	0														
X14	0.524	1.498	0.253	-0.749	-0.122	0.688	0.451	1.197	1.875	-0.483	0													
X13	-0.315	-0.574	1.194	-0.378	-1.199	0.838	-0.559	-0.54	1.02	0.134	-0.032	0												
X12	-1.205	-0.654	1.409	-0.572	-0.71	0.155	-0.104	-0.738	0.878	1.204	-0.343	-0.318	0											
X11	0.39	0.046	0.882	-0.14	0.369	1.544	-1.123	-0.658	0.443	-0.074	-0.192	0.055	-0.062	0										
X10	0.631	0.061	1.803	-0.54	-0.218	0.442	0.709	0.353	2.388	-0.82	0.852	0.313	-0.489	0.233	0									
X9	1.146	1.466	1.401	-0.467	-1.461	1.235	-0.655	1.096	-0.215	0.527	0.723	0.44	0.239	1.066	0.673	0								
X8	-0.591	-0.243	1.563	-0.482	-0.908	1.625	-0.787	0.807	-0.048	-0.145	0.134	-0.583	0.06	0.138	-0.117	0.008	0							
X7	-0.221	0.282	0.371	-0.706	-0.848	0.087	-0.469	0.958	-0.495	-0.394	-0.054	-1.168	-0.524	-0.2	-0.227	-0.128	0.03	0						
X6	0.508	0.742	0.553	0.579	-0.007	-0.22	0.833	-0.089	0.347	1.022	0.816	1.388	1.547	1.331	1.409	-0.107	0.379	0.665	0					
X5	-0.599	-0.003	-0.04	-0.175	0.18	-0.479	0.149	-0.092	0.177	-1.062	-0.51	0.154	0.322	0.285	0.041	-0.346	0.424	-0.198	-0.07	0				
X4	-0.12	0.727	-0.017	-0.064	0.162	0.395	-0.689	-0.686	-0.322	-1.02	-0.887	-2.235	-0.581	-0.704	-1.251	-2.015	-0.53	-0.751	-0.248	0.134	0			
X3	-0.164	-0.884	0.616	0.21	-0.355	0.709	-0.358	-0.247	0.541	-0.856	0.188	-1.376	0.687	-0.491	1.081	-1.119	-0.759	-0.464	0.826	-0.835	0.18	0		
X2	0.563	-0.09	0	-1.045	-0.356	1.039	0.254	0.014	0.014	-0.204	-0.364	-1.082	0.442	-0.843	0.673	-0.437	0.098	0.197	1.017	1.254	0.723	0.059	0	
X1	1.009	0.167	1.395	0.035	-0.441	0.849	-0.741	0.627	0.257	0.507	0.279	1.698	0.591	0.001	0.335	1.707	1.057	1.061	-0.335	-1.487	-1.269	0.385	-0.48	0

APPENDIX IV

Standardized Residual Covariances (Group number 1 - Default model)																							
	Y2	Y1	X24	X23	X22	X19	X18	X17	X16	X15	X14	X12	X11	X10	X9	X8	X7	X6	X5	X4	X3	X2	X1
Y2	0																						
Y1	0	0																					
X24	0.765	0.158	0																				
X23	-0.026	-0.819	0.13	0																			
X22	0.368	-0.399	-0.788	0.138	0																		
X19	2.379	1.105	0.098	-0.349	0.964	0																	
X18	-0.748	-0.879	0.106	0.177	1.504	1.519	0																
X17	0.096	0.293	0.076	-0.306	0.776	0.772	0.1	0															
X16	1.158	1.03	-1.376	-1.173	0.996	0.889	0	-0.174	0														
X15	-0.564	0.317	0.799	-1.084	-0.57	0.364	-0.722	-0.738	-0.167	0													
X14	0.491	1.454	0.256	-0.746	-0.12	0.691	0.436	1.182	1.862	-0.481	0												
X12	-1.277	-0.739	1.4	-0.583	-0.718	0.149	-0.151	-0.783	0.837	1.141	-0.397	0											
X11	0.357	0.001	0.891	-0.13	0.375	1.55	-1.135	-0.669	0.434	-0.052	-0.173	-0.11	0										
X10	0.621	0.04	1.819	-0.522	-0.206	0.453	0.715	0.359	2.395	-0.763	0.905	-0.494	0.316	0									
X9	1.151	1.46	1.402	-0.466	-1.46	1.236	-0.655	1.097	-0.214	0.474	0.676	0.162	1.011	0.636	0								
X8	-0.586	-0.251	1.564	-0.481	-0.907	1.625	-0.787	0.807	-0.046	-0.208	0.079	-0.032	0.073	-0.162	0.008	0							
X7	-0.217	0.275	0.372	-0.705	-0.847	0.088	-0.47	0.958	-0.494	-0.45	-0.104	-0.606	-0.258	-0.266	-0.128	0.029	0						
X6	0.511	0.734	0.553	0.579	-0.008	-0.22	0.832	-0.089	0.349	1.013	0.808	1.516	1.326	1.418	-0.107	0.379	0.665	0					
X5	-0.594	-0.012	-0.04	-0.175	0.18	-0.479	0.149	-0.091	0.18	-1.072	-0.519	0.284	0.28	0.053	-0.345	0.426	-0.197	-0.068	0				
X4	-0.119	0.716	-0.017	-0.065	0.161	0.395	-0.692	-0.688	-0.323	-1.03	-0.896	-0.613	-0.71	-1.244	-2.017	-0.532	-0.752	-0.251	0.132	0			
X3	-0.156	-0.887	0.617	0.21	-0.355	0.709	-0.36	-0.248	0.541	-0.921	0.13	0.596	-0.559	1.031	-1.12	-0.76	-0.465	0.823	-0.837	0.175	0		
X2	0.573	-0.092	0.001	-1.044	-0.356	1.04	0.254	0.014	0.016	-0.269	-0.42	0.352	-0.909	0.625	-0.436	0.099	0.198	1.016	1.254	0.72	0.054	0	
X1	1.022	0.17	1.396	0.036	-0.441	0.85	-0.739	0.629	0.26	0.452	0.231	0.514	-0.055	0.295	1.711	1.062	1.065	-0.333	-1.484	-1.269	0.386	-0.476	0

APPENDIX V
GOVERNMENT DOCUMENTS

Emergency Notice of the Office of Henan Education Department on Organizing Secondary Vocational School Students to Practice in Foxconn Science and Technology Group

(Yujiao Television [2010] 89)

Education bureaus of provincial municipalities, key empowered counties (cities) and provincial secondary vocational schools:

On August 31, the Provincial Department of Education organized a meeting on the recruitment and internship of secondary vocational schools and mobilized and deployed the students of secondary vocational schools to work as interns in Foxconn Science and Technology Group. In order to further strengthen leadership and promote the effectiveness of this work, the following urgent notices are given concerning the organization of secondary vocational school students to work as interns in Foxconn Science and Technology Group:

1. Raise awareness and strengthen leadership

Foxconn Science and Technology Group is one of the top 500 enterprises in the world. Its settlement in Henan will play a positive role in promoting industrial restructuring and expanding employment in our province. Secondary vocational school students work-study alternation and on-the-job practice are the important components of vocational education teaching and training mode; part-time work-study and part-time work-study are the important forms for secondary vocational school students to improve their self-cultivation and prepare for employment. Educational administrations at all levels and secondary vocational schools should fully recognize the importance of secondary vocational students 'internship in Foxconn Science and Technology Group, and actively organize their school students to internship in Foxconn Group. The main leaders of each unit should inquire, deploy, and implement in person. The leaders in charge should go deep into the specific guidance and follow up the effectiveness. Relevant personnel should communicate and coordinate closely to form a joint force to effectively promote the internship of secondary vocational students.

2. Adhere to Principles and Carefully Organize

All localities and schools should publicize extensively and mobilize thoroughly, adhere to the principle of voluntariness on the basis of doing ideological work well, arrange teaching plans rationally, and make up for the course progress affected by post-practice by weekends or holidays,

APPENDIX V

so as to ensure that the teaching plans are completed on schedule, and organize engineering-related specialties such as electronics, computer and information engineering as far as possible. Students of other majors with financial difficulties in their families should be given appropriate care when they volunteer to participate in the internship. Full-time teachers should be accompanied during the transportation period and internship period, and they should be responsible for the life, personal safety, and mental health of interns in addition to their work.

Before September 10, on-the-job interns, mainly second-year students, organized by schools around the country, were still organized and transported according to the original plan. From September 10 to September 20, in principle, schools only organized and mobilized the current third-year students (i.e. interns who have been arranged by the schools themselves) to participate in internship internships in order to ensure that Foxconn Group officially settled in Henan Province and had a sufficient number of high-quality staff after the year's mass production. At the same time, vocational schools should actively expand their scope and organize graduates who have not yet graduated or have not yet graduated but whose employment is not ideal for working in Foxconn Science and Technology Group. In order to speed up the progress of work, schools and localities must complete half of the tasks assigned by September 10, and complete all tasks by the end of September. Now, according to the needs of the work, all tasks should be completed before September 20.

3. Strengthening Responsibility and implementing it

Secondary vocational school students' internship in Foxconn Science and Technology Group is one of the key tasks of educational administration departments at all levels and secondary vocational schools in the near future. We should strictly implement the responsibility of the first-hand. Since September 6, the daily newspaper system will be implemented in the whole province. Every unit must report the implementation to the provincial education department before 6 p.m. every day.

Contacts: xxx

Contact telephone numbers: xxx

September 4, 2010

APPENDIX V

List of the First Class A Key Construction Projects in Henan Province in 2014

List of Key Projects of Henan Development, Reform and Construction [2014]

Serial number	Name	Main Construction Contents and Scale	The region
Zhengzhou Airport Economic Comprehensive Experimental Zone Project (8 Foxconn Projects)			
One renewal project			
1	Hongfujin Precision Electronics (Zhengzhou) Co., Ltd. Zhengzhou Foxconn Airport Project	The total building area is 6.5 million square meters, of which 4 million square meters are factory buildings and 2.5 million square meters are blue-collar apartments. Design scale mobile phone 300,000 units per day, mobile intermediate (L5) 300,000 sets per day	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
Four new start-up projects			
1	Henan Xinrui Commercial Real Estate Co., Ltd. Foxconn Xiangrui Plaza Project	With a total floor area of 510,000 square meters, Phase I will mainly construct Foxconn Staff Apartment Building and its supporting commercial facilities.	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
2	Zhengzhou Airport Construction Investment Co., Ltd. Foxconn Supporting Industrial Park Project	With a total floor area of 300,000 square meters, infrastructure in the planning area will be built to ensure the entry of Foxconn's supporting industrial chain projects.	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
3	Foxconn Group Living (Fanke) Town	With a total floor area of 300,000 square meters, Phase I will mainly construct R&D centers and laboratories, business centers and related supporting facilities.	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
4	Huadian Distributed Energy (Zhengzhou) Co., Ltd. Huadian Foxconn Zhengzhou Distributed Energy Station Project	The total building area is 13,000 square meters, and the construction scale is 3 x 50 MW, of which the first phase is 2 x 50 MW.	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
Three Prophase Projects			
1	Foxconn Group Biomedical Industrial Park	The total building area is 1.6 million square meters, mainly building Fuji. Kangsheng Medical Park, Foxconn International Health Park, Foxconn Kang Medical College	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
2	Hongfujin Precision Electronics (Zhengzhou) Co.,	With a total floor area of 9 million square meters, it mainly constructs six major themes: high-end manufacturing	Zhengzhou Airport Economic Comprehensive

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	Ltd. Precision Electronics and Machinery Industry Park Project	area, engineering supporting area, logistics sub-loading area, living supporting area and information exchange area.	Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)
3	Henan Dingsheng Dynasty Hotel Management Co., Ltd. Foxconn Science and Technology Park Logistics Support Base Project	With a total floor area of about 390,000 square meters, it mainly constructs refrigeration depots, warehouses, refrigeration stations, catering centers and tableware washing centers.	Zhengzhou Airport Economic Comprehensive Experimental Zone (Zhengzhou Xinzheng Comprehensive Bonded Zone)

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