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Factors influencing land circulation in urban villages, through the cases of Beijing

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Summary

There are many urban villages in Beijing, which disorders the planning of the whole city and the construction of infrastructure. The government is studying on how to implement different policies to redevelop them, and the land circulation is closely relative to the mode of redevelopment. The main objective of the research is to test whether land circulation is more widespread in urban villages in the centre of city than those in the suburbs. This research chooses the combination strategy of survey and case study. Questionnaires and interviews are done in an urban village in the centre of city and one in the suburb. T-test is used to analyse the difference in land circulation in these two villages, and logistic model is used to explore the relationship between urban village and land circulation. Conclusions are drawn as follows. Firstly, villagers in Huairou Town (in the suburb) may depend more on agriculture, and their income is less than income in Xibeiwang (in the centre of city) Town. At the same time, their comprehension and acceptance of policy are similar. Secondly, area of land flowing out and the percentage of people who have transferred their land under use rights in Xibeiwang Town is more than those in Huairou Town. Thirdly, men, elderly people, villagers with higher education level and income may be more active and willing to participate in land circulation. Age, education level, part-time job and insurance seem to have a positive relationship with the area of land flowing out. The effects on inflow of land are in reverse. However, the influence of another variable perception is confusing. The acceptance of laws/regulation tends to have the negative effects, while the effect of comprehension of policy, acceptance of pricing mechanism and management of transaction is positive. At last, cases from interviews are clarified into six types. Three reasons for inflow are low price of land use right, help of government and economies of scales, and three reasons for outflow are benefits from transfer, lack of labours in household and higher income of other jobs.

Keywords

Urban village, land circulation, land use right, logistic model, willingness

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Chapter 1: Introduction

1.1 Points to be included in this chapter

Urban village can be defined from the perspective of property right. Li, Lin et al(2014, p.301) hold the view that "it can be defined as village that is included in the scope of urban land planning and can be seen as the result of incomplete rural - urban transformation". Urban villages occur with the expansion on city and cause many problems, so the government has started lots of projects to redevelop those urban villages. Land circulation is closely related to the practice of redevelopment. This chapter describes the background of land circulation in urban villages including current condition of urban villages, the land reform in 2015 in China and the introduction of research area. Secondly, it states land conflicts in urban villages and problems in land leasing market. Thirdly, it clarifies the objective of this research and the main questions that will be study on. Fourthly, it emphasizes the significance of this research and the contribution it will make. At last, it explains what will be included and what problems this thesis cannot address.

1.2 Background

1.2.1 Redeveloping urban villages in China

With the urbanization, China has seen a large influx of population into the city. The percentage of urban population has reached to 57.35% of the total population in 2015 (Guo, Shi et al 2017). In the process of transferring rural land to urban, as a residential area for immigrants, urban villages have attracted wide attentions. Abundant literatures focused on the understanding of urban villages. The urban-rural dual land system in China is the main factor that contributes to the formation and development of urban villages (Lai and Peng 2014).

The essence of urban-rural dual land system before economy reform is the dependency cities have on rural area, as well as most of the incomes of urban people flow into the rural area through the purchase of necessities. But now, the situation has reversed. In fact, the foods provided by the countryside in the past are imported from the international market. The urban-rural dual structure is mainly caused by the market, not the artificial system. The gap between urban and rural areas is expanding and the conflicts between them in urban villages are acute. Urban villages can be defined from different disciplines. From the perspective of land property right, villages that are included in the scope of urban land planning are called urban villages, which can be seen as the result of incomplete rural - urban transformation (Li, Lin et al 2014). The village is not only the concept of space, but also the concept of social economy. It refers to the area in the city but still remains the framework of the social structure, economic life, personal status and management style inherited in the agricultural society (Hao, Sliuzas et al 2011). Compared with the overall level of the city, the living conditions of urban village are worse, with small living space, inadequate housing facilities and dilapidated house. However, such a place has become the low-cost housing for a large

number of low-income tenants. The urban village is closely related with the problem of poverty in Chinese cities. So the government has decided to invest in redeveloping these urban villages. Most of the projects are conducted in the villages, shantytowns and corners of the land.

1.2.2 The land reform in China

The constitution and the laws of land management prescribe that the urban land is owned by the state and the land in the rural or suburbs is owned by the collective in addition to the special provisions of the law (Zhang, Tang et al 2017). The state can expropriate collective land and give a certain amount of compensation to the collective. Any organization or individuals must not trade or in other illegal forms to transfer land. But the right to use the land can be transferred in accordance with the relevant laws (Wang, Tong et al, 2011). The laws of transferring the use right of urban construction is very loose. They can be traded freely with the premise that the land use is not changed. But for the collective land, there are more restrictions. Individuals do not own rural construction land, so they cannot transfer right-of-use or dispose land. The collective land in the rural area is divided into agricultural land, homestead (the collective land allocated to villagers only for building their residence) and collective construction land.

Local government occupies the dominance of rural land allocation so that the rural land cannot be cultivated and managed in big scale, which lead to the low efficiency. At the same time, the lack of market-oriented operation caused the rural property distribution in chaos and the benefit of farmers cannot be protected (Ping Li 2003). Introducing the use right of land into the market properly and steadily can invigorate farmers' assets can be and make their property income can increase sharply. In the past, land in the rural areas must first be expropriated into state-owned land before entering the market. In 2003, the formal implementation of the Rural Land Contract Law stipulates that land can be transferred in the form of subcontract, lease, transfer and exchange (Wang, Tong et al, 2011). In 2015, the central government made the decision to reform the laws of transferring the right-of-use in rural land system. From that time, right-of-use of rural collective operating land can be transferred, leased and shared. Meanwhile, the related institution will establish and improve the rules of transactions, investment, finance, taxation, auditing and other related services (Wang and Zhang 2017). This reform is significant to reduce the income gap between rural and urban areas. From the perspective of supply and demand balance of high prices, it can relieve the urban construction land shortage that China faces.

1.2.3 Introduction of Beijing

Beijing is the capital of China. The total area is 16,400 square kilometers, of which the mountain area is 10200 square kilometers, about 62% of the total area. The plain area is 6200 square kilometers, about 38% of the total area. The landscape in Beijing is that the northwest part is high while the southeast part is low. The average altitude is 43.5 meters. The plain is 20 to 60 meters and the mountain is generally 1000-1000 meters above sea level. Beijing is divided into 16 districts: Dongcheng District, Xicheng District, Chaoyang District, Fengtai District, Shijiazhuang District, Haidian District, Shunyi District, Tongzhou District, Daxing District, Fangshan District, Mentougou District, Changping District, Pinggu District, Miyun District, Huairou District and Yanqing District, including 147 streets, 38 townships and 144

towns. As one of the biggest cities in the world, the urbanization rate here is high. At the end of 2016, the resident population of Beijing was 21.729 million, an increase of 24,000 over the last year, increasing 0.1%. The quantity of increase is 16.5 million less than the past year, and the growth rate decreased 0.8%. The report during the two sessions pointed out that the government will control the resident population size of Beijing in 22 million or less in 2017. According to the latest population data released in 2016, it means that the task of controlling population in 2017 is still arduous. According to comparable prices, the GDP in Beijing achieved 248.93 billion yuan, an increase of 6.7% over the last year. The GDP growth in the first, second and third quarter was 6.9%, 6.7% and 6.7% respectively. The added value of the primary, secondary and tertiary industry was 12.96, 477.44 and 1999.53 billion yuan respectively. For the housing market, Beijing invested 404.54 billion yuan on the real estate development, decreasing by 4.3% than the last year. The area of new commercial housing construction is 28.137 million square meters (Beijing Bureau of Statistics 2017).

According to the population distribution, Beijing is usually divided into the central city, nearby suburbs and remote suburbs as showed in figure 1-1. The central city includes Dongcheng District, Xicheng District and Xuanwu District, Chongwen District before the revocation. The nearby suburbs include Shijingshan District, Chaoyang District and Fengtai District. The remaining districts like Tongzhou District, Changping District are remote suburbs. According to the third national census in 1982, the population density of Beijing's second ring continued to decline, and by 1990 the population of the old city decreased by 3.38%. The large-scale redevelopment of the old city in the 1990s accelerated the migration from the inner city to the tricyclic ring. By 2010, the population in central city has dropped by 10% than 30 years ago. After experiencing rapid population growth in the suburbs, the population of Beijing accumulated in more marginal zones. Before 2000, Tongzhou District, Changping District and other suburbs are still sparsely populated areas, but they experienced an explosion of population growth in the next ten years, the growth rate of which is more than 70%. In addition, for the distribution of resident population, the tendency to accumulate in the suburbs is obvious. The increased population of immigrants in the central city only reached 7% of the total population. More than 45% of the new immigrants gathered in the suburbs like Tongzhou District. In the decade from 2010 to 2010, the percentage of foreign population in the central and nearby suburban areas decreased by 3.8% and 7.8% respectively, and only the percentage of the remote suburbs increased by 12.5% (Beijing Bureau of Statistics 2017). However, unlike people in the western cities take the initiative to move to the suburbs to escape the crowded urban areas, Beijing's central area is still irreplaceable attractive. However, people have to stay away from the centre and endure long commuter distance.

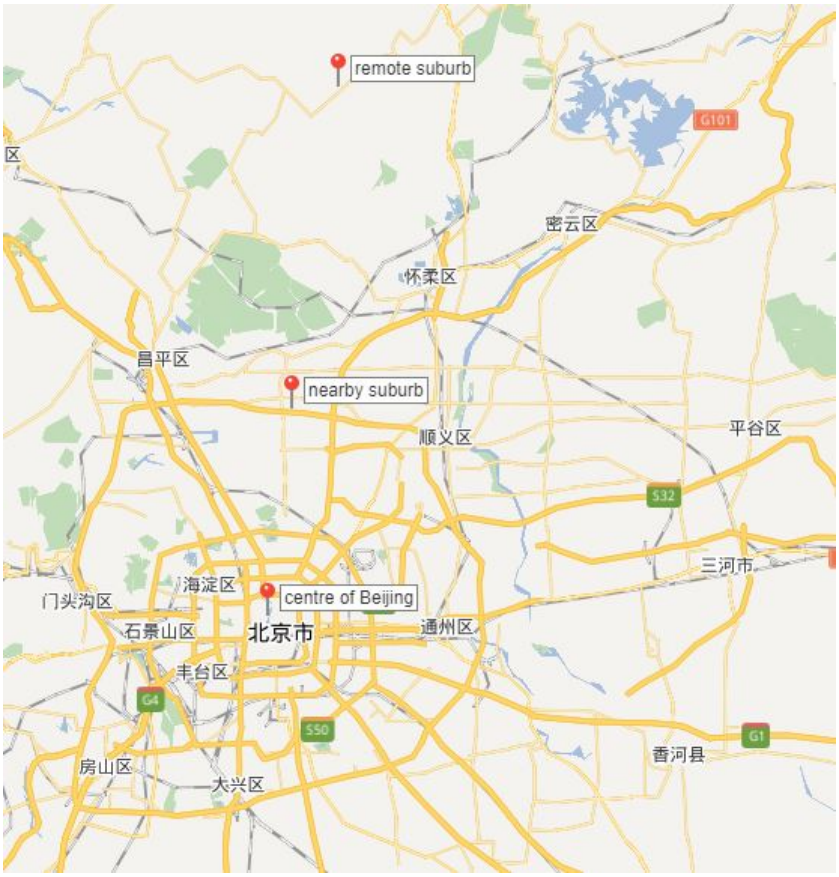


Figure 1 map of Beijng

1.3 Problem statement

There are many urban villages in Beijing, which disorders the planning of the whole city and the construction of infrastructure. Additional, they are the gathering space for low-income residence in Beijing, where the environment is dirty and messy. The old residential housing built in the last century there are dilapidated and the self-built phenomenon here is common. Due to the land location conditions of urban villages are relatively superior, and the land price is low compared with the price in city, the real estate secondary market here is particularly active. Land circulation is universal in urban villages.

Land circulation means that the land property rights transfer between different economic entities. The land property right refers to the land ownership or land use right (Lin 2014). In China, all the land is the socialist public ownership and there are two different forms of land ownership, that is, the ownership of the state and collective ownership. All the land belongs to the state or the collective (Zhang, Tang et al 2017). Therefore, at this stage in our country, the circulation of land ownership can only be operated in expropriation or exchange between different collectives. For individuals, land circulation mainly refers to the transfer of land use right. The reform of land circulation in 2015 focused on the transfer of land use right of collective operating construction land, homestead and agricultural land. The transfer of land use right includes lease, transfer, mortgage, replacement, sale shares and joint venture (Wang and Zhang 2017).

Land circulation can improve the income of villagers and increase the effectiveness of land use. But at present, there are many problems in the land circulation market. Firstly, the management of land in China is highly problematic especially in suburb, because the obligation and power of different government sectors overlap, which causes conflicts between them. What's more, the laws of land are not universal among farmers. Some houses are built without certification or even in the agricultural land, and these illegal housing are still sold underground (Hao, Sliuzas et al 2011). Secondly, the transfer between farmers occupies a considerable part of the rural land circulation, but some trades are irregularly. Many of villagers only adopt the "oral agreement" approach, so the trade lacks written contract. Furthermore, even if there is a written contract, the procedure and content of the contract are not standardized, and the rights and obligations of the parties to the transaction are not clear. What is more, for some contracts, the duration of contracts term is longer than the term of land use right that the sellers have, which will cause disputes in the future. At last, the imperfect land market and price mechanism are crucial to realize the rational allocation of land resources by land circulation (Bao, Xu et al 2009). In view of this, China's land rental market development lags behind the demand of economic development. In the spontaneous land use right transfer market between farmers, due to the lack of intermediary organizations, the land circulation information channels are blocked, and the price of land circulation still led by government. Meanwhile, the form of land circulation is diverse, so it is difficult to make the standards to regulate the price. Those caused that the price in the market cannot accurately reflect the relationship between land supply and demand. The process of land circulation is not transparent enough and the benefit of villagers cannot be protected.

In theory, the incomplete land property right system in our country is the key to the existence of the land problem in urban village, and it is also the root cause of the messy governance at all levels. The subject that the collective refers to is not defined clearly by the laws. Circulation of agricultural land, collective operating construction land and homestead should be standardized by the government. This process is affected by many factors, so it is significant to study on it to support the implement of related policies. This paper chooses urban villages in Beijing as the typical case to research on it. With the expansion of construction area in Beijing, some villages are surrounded by city, which can be seen as urban villages. Many villagers go out to find job with higher salary in the city, so more land and house become vacant. These villages are mostly in good location with high leasing price. In order to make full use of the land and get more income, individuals began to transfer their land spontaneously. However, problems also occurred in land circulation market in urban villages of Beijing as mentioned before (Bao, Xu et al 2009).

In this paper, it is assumed that the condition of land circulation is different in urban villages in different areas of Beijing. The study assumes that urbanisation has more influence on urban villages in the centre than in the suburb. It is easier for villagers in the centre to find other job, and they depend less on agricultural production, so they will transfer their agriculture land to others under use right. Additionally, Chen, Guo et al (2011 pp.2) pointed out that the demand for housing in the centre is very large, which increase the land price. Driven by the profit, people in urban villages there will lease their house. Based on these two points, it is supposed that land circulation is more widespread in urban villages in the centre of city than those in the suburbs.

1.4 Research objective

The main objective of the research is to test whether land circulation is more widespread in urban villages in the centre of city than those in the suburbs.

Therefore, the specific objectives are:

1 To describe the condition of land circulation in two urban villages.

2 To explain factors that affects the land circulation and the mechanism in that.

1.5 Research Questions

Is land circulation more widespread in urban villages in the centre of city than those in the suburbs? What are reasons for this?

The specific sub-questions are:

1 what is the difference between urban villages in the centre of city and those in the suburb?

2 what is the difference of land circulation in these two villages?

3 For what reasons do owners transfer their land use right?

1.6 Significance of the Study

The development of city pushes the government to redevelop urban villages as soon as possible. As a significant activity participated by people living in urban villages, land circulation is closely related with problems in villages. The land property rights system in China has not been established completely, which make the condition of land circulation in a mess. To solve the land problems in villages from the source, the key is to make property rights in urban villages clear. This paper clarifies problems of urban villages and analyzes the obstacles of transformation of urban villages in China, focusing on the current land property right system and the implement of related policy. In order to solve this problem, it is significant to establish and improve the relevant laws or regulations, which make the process of land circulation clear. This paper explores and tests the factors that may influenced the land circulation to improve and promote this process in China. It provides theoretical basis for the management of land circulation in urban villages. And at the same time, land circulation in Beijing can be seen as an example demonstration providing more information for other cities in China to help to redevelop urban villages and relieve poverty.

1.7 Scope and limitations

This study concentrates on explaining factors influencing land circulation and the mechanism of land circulation system in urban villages. Under the Chinese background, this paper test which factors influence land circulation and how it works through survey in Beijing. Obviously, the land circulation system is very comprehensive in the market. In order to stress the key point and simplify the process, this paper controls the unrelated variation when analysing the impact of independent variation quantitatively and qualitatively. Furthermore,

the variation analyzed in this paper may be mutually affected, which is not considered in quantitative analysis. The applicability of findings and conclusions is limited because some premises are generated based on the condition of Beijing.

Chapter 2 Literature review

2.1 State of the Art of the Theories/Concepts of the Study

2.1.1 Introduction

The transfer of land is the key step in the process of urbanization. How to regulate land transfer to promote the increase of regional economy by land instruments is one of the hot topics of academic debate. The clear definition of land property right is important for establishing land transfer market. Through the land property theories, scholars study the institution of land circulation and factors affecting the land transfer, which is part of theoretical foundation of land governance worldwide. This chapter summarizes the main academic discussions on land tenure and land markets to have a better understanding about land transfer.

This literature review chapter consists of four parts. The first part will explain the land tenure in China. The second part introduces the different forms of land circulation in China. The third part analyses the factors that may affect the scale and rate of land transfer. The last part describes the special condition of land circulation in urban villages.

2.1.2 Researches on urban villages

Urban villages can be defined from different disciplines. From the perspective of land property right, villages that are included in the scope of urban land planning are called urban villages, which can be seen as the result of incomplete rural - urban transformation (Li, Lin et al 2014). The village is not only the concept of space, but also the concept of social economy. It refers to the area in the city but still remains the framework of the social structure, economic life, personal status and management style inherited in the agricultural society (Hao, Sliuzas et al 2011).

Most people in urban villages engaged in low-end work in cities, providing cheap labour to the city. The construction layout there is messy due to the lag of urban planning and illegal construction. The high density of houses causes poor lighting and ventilation conditions. Liao (2010, p.132) thinks that the disorder construction makes the land use efficiency low. In Shanghai Province, living area of residents per capita is 17.5m2. But in urban village, it is less than the half of city's average. Another problem is that the basic facilities are not enough. According to the data in Shanghai in 2010, only about 20% of tenants in urban villages own independent kitchen, independent bathroom, air conditioning and the Internet (Wang, Lin et al 2012).

In recent years, local governments of each city have studied on how to redevelop urban villages from different perspectives and achieved theoretical and practical experience by exploration. However, land conflicts there are still acute. The main reason is that the land property rights system is not complete, which makes operations in land circulation irregular and brings disputes to redevelopment. Urban villages are usually developed in 3 ways. The first way is transferring the collective land to state-owned land by expropriation and changing villagers from farmers to citizens. By introducing the land into market legally, the value of

the land as assets are invigorated, and the funds for reconstruction will be obtained. Therefore, the villages can be integrated into unified urban planning. The second one is keeping the ownership of collective unchanged and transferring the use rights of collective construction land in accordance with the price of state-owned land to get funds. The third way is figuring out the area that each village needs for housing and public use by the population and delimit it. In the delimited areas, the villagers can build new house according to regulations by themselves. Other areas are expropriated and reconstructed (Wu, Zhang et al 2013).

The land circulation is closely relative to the mode of redevelopment. In order to promote the urbanization in China, the local government implements different policies to redevelop different types of urban villages. At present, urban villages are classified according to different standards for the local conditions. Hong and Xue (2007, p.107) pointed out that the category is often divided by the ownership of land, land location, agricultural development, source of income and the identity (hukou) of villagers. Using these five indicators, the analysis including qualitative and quantitative methods can be done. This paper lists two representative classifications. One is Guangzhou classification system. A type is defined as villages completely surrounded by the city, without any agricultural land. B type is villages that have a small amount of agricultural land and villages still in the rural areas but recently listed as the key construction areas of urban expansion. C type is villages that have a large amount of agricultural land in rural areas. The other one is Wuhan classification system. According to the per capita arable land in the urban village, they are divided into three categories. A type refers to the village without any cultivated land. B type refers to the village whose per capita arable land is less than or equal to 0.1 mu (a unit of area, 1 mu=666.67 m^2). C type refers to the village whose per capita arable land is more than 0.1 mu (Yu and Hu 2006). According to these two kinds of classification system, the percentage of agricultural land in the villages is a dominant factor that influences the rate and scale of land circulation.

2.1.3 The land tenure

2.1.3.1 General discussions on land property right

Land circulation refers to the transfer of land rights. Therefore, the study of land property rights is the cornerstone of land transfer research. The relationship between land property right and land circulation is mainly manifested in two aspects. The first one is that the construction of land property right institute is the legal guarantee of land circulation. Land circulation refers to the rational allocation and the effective use of scarce land resources, and it is also related to economic interests of land owners. The other relationship is that land property right institution can regulate the behaviours of land owners. Land transfer inevitably leads to the decomposition of land property right and forms the diversified interests of land owners, users and managers. In order to guarantee the benefits and fulfill responsibilities among various stakeholders, property right institution needs to be improved (Lai, Peng et al 2014).

Property rights are theoretical socially-enforced constructs in economics for determining how a resource or economic good is used and owned (Durlauf and Blume 2008). It is often referred to as a bundle of rights, including possession, right of use, lending right, right of transfer, right of consuming and other related rights. It cannot be regarded as a single right,

but as a collection of rights. Many of these rights can be transferred without losing ownership (Klein and Robinson 2011). For the land property right, it is the sum of all land rights, composed of various rights, including land ownership, land tenure, land use right, land usufruct and land disposition right (Wang and Zhang 2017). All these rights are based on land ownership, which is the core of other land rights. Additionally, the land use right is the right to utilize and gain benefit from the land by law. Land use right has both the broad and narrow definition. The narrow one is the actual use of land, and it has the parallel relationship with other land rights. The broad one is an integrated concept that includes the land use rights, land tenure, part of land usufruct and incomplete land disposition right, and independent on land ownership.

2.1.3.2 The land tenure in China

The land tenure system in China is distinctive compared with other countries. It has adopted urban-rural dual land system. According to Article 8 of Land Administration Laws of the People's Republic of China issued in 1986 (revised in 2004), Urban land is owned by state (Wang, Sun et al 2014). For the rural and suburban area, the land is officially owned by village collectives except for natural resources, minerals, treasures under the land and so on, which belong to the state (Zhang, Tang et al 2017). Meanwhile, China has a land-holding system, under which land use rights are separated from land ownership (Khantachavana, Turvey et al 2013). Article 10 of Constitution states that all lands are in public ownership, which are forbidden from transferred, leased and mortgaged. However, land use rights are allowed for private transactions in a limited period by law, and the term depends on land use purposes.

From 1982, the Household Responsibility System (HRS) has been established, through which land use rights are allocated to households in rural areas and they can cultivate the land assigned to them. The land contracts were initially granted for only three years. In 1987, the government began issuing 15-year land use contracts to households, so they have had fixed-term contracts to use the land for production (Jin and Klaus 2009). Then they were extended for an additional 30 years when the initial term expired. In 2008, the government extended the term of contract again, which made it unspecified long (Dean and Damm-Luhr 2010). At the same time, households were entitled to inherit their contract rights from the previous generation. At first, these contracts were verbal and rarely protected farmers from periodic reallocation under administrative orders made by village leader, which is intended to adapt to the formation of new households and changes in population.

With the development of land rental market, the government decided to strength land tenure security by legal measure. In order to strengthen the households' rights of secure possession, the central government revised the Land Management Law in 1998, which brought restrictions to transfer of land use right. In 2003, aiming at enforcing 30 year land-use contracts, Rural Land Contracting Law is decreed to disallow large-scale reallocations of land and limit small-scale re-adjustments (Ping Li 2003). The term of the contract becomes longer and longer with subsequently new policy, but it remains that land can only be transferred temporarily rather than sold outright. These land use rights are gradually closer in nature to private property right, which can be described as "quasi-private" property right. Long contracts reduced administrative land reallocations made by village leaders and created the

precondition for more active rental markets. But many problems still remain in this process. The incomplete land property rights limit the extent to which land can be used as collaterals to obtain credit. What effects have made in practice and what further reforms are required have not been solved (Deininger & Jin, 2009). In order to demonstrate the development of land tenure system more clearly, the reforms of land tenure in the 7 decades are listed in the table below.

Table 1 the reforms of land tenure

time	**Land tenure/land reform**
June, 1950	The new government created private ownership of land, and land is owned by farmers (*Agrarian Reform Law of the People's Republic of China).*
1955	The socialist transformation created the ownership of the Rural People's Commune, and land is owned by the collective (*Model Articles of Association of Advanced Agricultural Production Cooperatives*).
1982	The Household Responsibility System (HRS) has been established, and the use right was separated from the land ownership (*Summary of the National Conference on rural work*).
June, 1986	the Land Management Law was enacted *(Land Management Law*).
1987	The government started issuing 15-year land use contracts to farmers, so individual households have had fixed-term contracts to use the land for production (*Notice of work in rural area*).
1988	The land Management Law was revised, so the use right of some land can be transferred according to law (*Land Management Law).*
1993	The contracted period of agricultural land was extended, and the contracted management right (the right to cultivated land and get benefit from that for the household) of productive development projects was allowed to be inherited (*Policies and measures on the development of agriculture and rural economy*).
1998	The law stipulates only state-owned land can be transferred under use right, and the land should be used for a fee in accordance with the law (*Land Management Law*).
2003	Rural Land Contracting Law is decreed to limit reallocations and re-adjustments. It also stipulates that the rural contracted land management right can be transferred in the form of subcontract, lease, transfer and exchange (*Rural Land Contracting Law*).
2005	The State Ministry of Agriculture issued the Regulation of Transfer of Rural Contracted Land Management Right to make the rural land circulation more standardized and in orderly way (*Regulation of Transfer of Rural Contracted Land Management Righ*t).
2006	Agricultural taxes were abolished in China (*Opinions on comprehensively promoting the reform of rural taxes and fees*).
2015	The land reform allowed the use right of rural collective operating land to be transferred, leased and shared (*Policy of allowing rural collective operating land on the market under use right*).

2016	The government set up plots where the rural contracted land management right and peasant housing property right can be mortgaged (*Policy of separation of the three rights*).

(Deininger & Jin, 2009, Dean and Damm-Luhr 2010, Wang and Zhang 2017)

2.1.3 The land circulation system

The land circulation system in China includes 2 types, transfer of land ownership and transfer of land use right, as showed in figure 2. Transfer of land ownership is led by the government and cannot occur between individuals, while land use right can be transferred freely. Therefore, this research mainly studies on the transfer of land use right in land circulation system, and the expropriation is referred to as the supplement for deeper consideration.

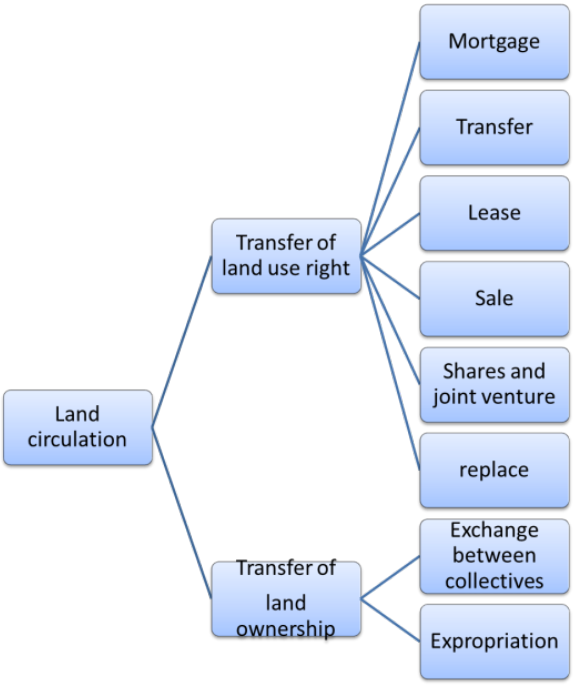


Figure 2 types of land circulation

2.1.3.1 Transfer of land ownership

In China, the transfer of land ownership can only be operated in expropriation or exchange between different collectives. According to Cai (2003, p.665), “the collective refers to the administrative village, the small group and sometimes even the town government in practice”.

With rapid development of economy and increase in population, more demand for rural land is created, which has resulted in compulsory land acquisition. Ito (2016 p.3) think “expropriation is the only legitimate channel for transferring land from rural collectives to the state”. The Constitution of China claims that the state must requisition land in formal process to convert rural land to urban land. After requisition, parts or all of farmer’s contracted land is invalidated, so the local government undertakes legal responsibility for compensation. Since land revenues are acquired by local government, in theory, they have enough funds to afford

reasonable compensation (Po 2011). However, some local officers refuse to provide farmers with a fair share of the subsequent sale of land use rights in practice (Po 2008).

The land expropriation for development of infrastructure and expansion of city has threatened the tenure insecurity of agricultural land (Tao and Xu 2007). According to Chinese constitution, private property can only be expropriated for public use and just compensation must be provided. But what is public use has not been defined clearly, and local governments usually have the authority to determine it in practice. Furthermore, some local governments sell these lands to private developers and transform the agricultural land to construction land under the guise of expropriation to get the huge profit of land use change (Deininger, Jin et al 2007). In addition, the how much compensation can be just depends on the value of the land in the market, but the lack of land markets makes it difficult to standardize, which causes many arguments for insufficient compensation (Ding 2007).

2.1.3.2 Transfer of land use right

Under the current land institution, people who are identified as a member of the collectives have the rural contracted land management rights and use rights. They are granted the land contract rights which serve like land titles automatically at birth. The Land Management Law stipulates that rural collectives need to issue certificates to legalise this kind of land right. With economic growth, the character of Chinese farm sectors has become small landholdings and overemployment, which caused the out-migration of rural people and provided impetus for land transfer. Decrease in agricultural labour may change the land-labour ratio and promoted consolidation of scattered fields (Ito, Junichi et al 2016). As can be seen in many researches, institutional reform of land rights ensures land tenure security. Farmers who get jobs in the city have opportunities to subcontract their extra land, while others consolidate scattered plots to expand the size for operational cultivation to achieve economies of scale. In 2003, the formal implementation of the Rural Land Contract Law stipulates that land can be transferred in the form of subcontract, lease, transfer and exchange. It makes land become transferable, and transactions of land use rights can also be seen as a form of land rental (Wang, Tong et al, 2011).

According to the land function, the rural land can be divided into 3 parts: collective operating construction land, homestead and agricultural land. The transfer between individuals mainly refers to the change of land users, not the conversion of land functions except the replacement. They are classified into 6 types according to Wang and Zhang (2017, p.57).

Table 2 types of transfer of land use right

Type	Description
Mortgage	Land use rights are regarded as a guaranteed debt by the owner. If the owner cannot to repay the debt at the end of its term, the land use rights will be owned by the creditor for debt repayment. According to the category of land circulation, mortgage also has two types: initial circulation mortgage and re-circulation mortgage
Transfer	Individuals or units who hold collective construction and sell land use rights to a new user in a new way. This type mainly refers to inheritance, gifts, etc.

Lease	Lease can be divided into the lease of initial circulation and the lease of re-circulation. The former means that landowners lease the land use rights to individuals or units for a specific period and the tenant pay an appropriate rent. The latter means that individuals who have obtained land use rights legally lease their rights again to other individuals or units. At present, leasing is the main form of transferring land use rights. It includes site rental factory, building rental and so on, and the rights are leased among village collective organizations, village enterprises or individuals.
Sale	Collective landowners of town or village specify a period during which the land use rights are transferred to other users in exchange for a fee. This is also a form of initial land circulation, separating the land use rights from the ownership. However, compared with lease, the land users also have the usufruct within this period, which allows them to possess, partially dispose this land and obtain the corresponding benefits.
Shares and joint venture	The owners or users of the collective construction land legally take the use rights as shares or investments of company and joint venture, which means they establish town or village enterprises or other economic organizations with other units or individuals to obtain incomes jointly.
Replacement	It refers to the reconfiguration of different plots. In this condition, the change in land use rights is mainly caused by the approval of non-agricultural construction.

(Wang and Zhang, 2017, p.57)

The newest policy is made in 2015 when the central government made the decision to reform the laws of transferring the right-of-use in rural land system. The Central Committee and the General Office of the State Council jointly issued the policy on the rural land expropriation, collective construction land and homestead and choose 33 pilot districts in China, which marks the reform of China's rural land system has begun. In the pilot district, the implementation of land management law and urban real estate management law are adjusted temporarily. The adjustments are as follows. Firstly, under the premise that the land is acquired legally and meets the land use planning requirement, the right-of-use of rural collective operating land can be transferred, leased and shared. And it can enter the same market with the same price as the state-owned construction land. Secondly, if the homestead is stock, the approval authority is decentralized to the township county government. If it is new, the approval authority is decentralized to the county government. Thirdly, the compensation for expropriation should include comprehensive consideration of land use, location, economic development level and per capita income to make reasonable standards. To ensure the housing and social security for land requisitioned farmers, the government will provide them with employment training efforts, pension, medical treatment and add them into urban social security system. The government also emphasize that only the collective operating construction land are allowed to enter the market and the collective non - operating construction land shall not enter the market. For those entering the market, they must meet the requirement of planning, use control and is acquired legally. At the same time the related institution should establish and improve the rules of transactions, investment, finance, taxation, auditing and other related services. The way that gives homestead back to the collective and get payment is voluntary and the transfer of use right is limited within the

collective economic organizations to prevent the city people to buy land in rural areas (Wang and Zhang 2017).

However, land transfer markets are still thin in China. As has been pointed out in many studies[1], the administrative land reallocation increased the uncertainty and insecurity. In the process of administrative reallocation, the confiscation of the rural contracted land management right by the collective would decrease farmers' initiative to lease out their land. In The village-wide reallocation happened once every 8–10 years during the 1980s and 1990s, accompanied with small scale reallocation (Zhang 2008). Farmers who ceased farming temporarily are at risk of having their land contract rights revoked, which impeded development of the land rental market (Feng, Heerink et al 2010). After the land tenure reform in 2003, land rentals increased, but contracts are still informal and are frequently signed between relatives. Although local governments as well as village leaders disseminate information about the Rural Land Contracting Law, many village leaders and households are not aware that transfers are permitted, and reallocation of land is not permitted any more (Mullan, Pauline et al 2011).

The land circulation in urban villages involves collective land ownership, the use right of collective construction land and the contractual management right of agricultural land. The current legal system of land property right is not completely systematic in China, which has caused some problems of land circulation, especially in urban villages. Transfer of land use right in urban villages has the following characteristics. Firstly, most transfer is spontaneous by villagers. In villages located in the urban fringe and along the traffic lines, farmers make use of its geographical advantages and lease the unauthorized collective land to land users. Many villagers rent their house to workers who came to Beijing from other provinces without hukou of Beijing at low price, and some agricultural land is leased for other function (Chen, 2015). Secondly, stakeholders involved in land circulation are diverse. The demand side includes enterprise, individuals, foreign investors, etc. The supply side includes collective land owners, individuals, local government etc. the messy management of land use rights causes some transfer against the regulation. Thirdly, there are diversified forms of transfer. Land is leased, sold, shared and mortgaged under the use rights in urban villages. At last, the price of transfer is not unified. In the process of land circulation, in order to attract the investment of developers, leaders of villages, towns bargain with each other (Guo and Xiao et al 2017).

2.1.4. Factors affecting land circulation in China

Land circulation can reallocate land and labour resources, which will improve the welfare of land providers and land demanders and improve economic efficiency in principle. It is affected by many factors, including land location, conditions of farmers, socio-economic environments and so on. The relationship among these factors is complex. Many scholars[2] have researched on this. On the one hand, many studies have analysed the famers' willingness to transfer their land use rights from the micro level. On the other hand, some

[1] Ye, J., Jiang, Y., and Feng, L., 2006, Lin, B. 2014

[2] Liu and Guo 2015, Liu and Lan 2015, Li and Yang 2002, Ogurtsov and Van et al 2008

literatures[3] studied on factors of the development of land circulation market from the macro level, including the instability of land ownership caused by land readjustment and the transaction costs in the land circulation market. In different areas, the transfer of labour force, the adjustment of agricultural structure and the force that government promotes land circulation are distinctive. Generally, the land circulation in developed districts is more frequent than in developing districts (Nguyen, Tran et al 2016). Renmin University of China organized a survey of rural land 17 provinces in 2005 found that the main influencing factor of transfer of agricultural land under use right is the agricultural land market (Ye, Jiang et al 2006). In China, the agricultural land market is still in the initial stage and develops slowly. Property rights and institutional barriers are the main factors that restrict the development of market. Signing standard contract and issuing household management certificate will promote the development of the rural land circulation market (Hong, Xue 2007).

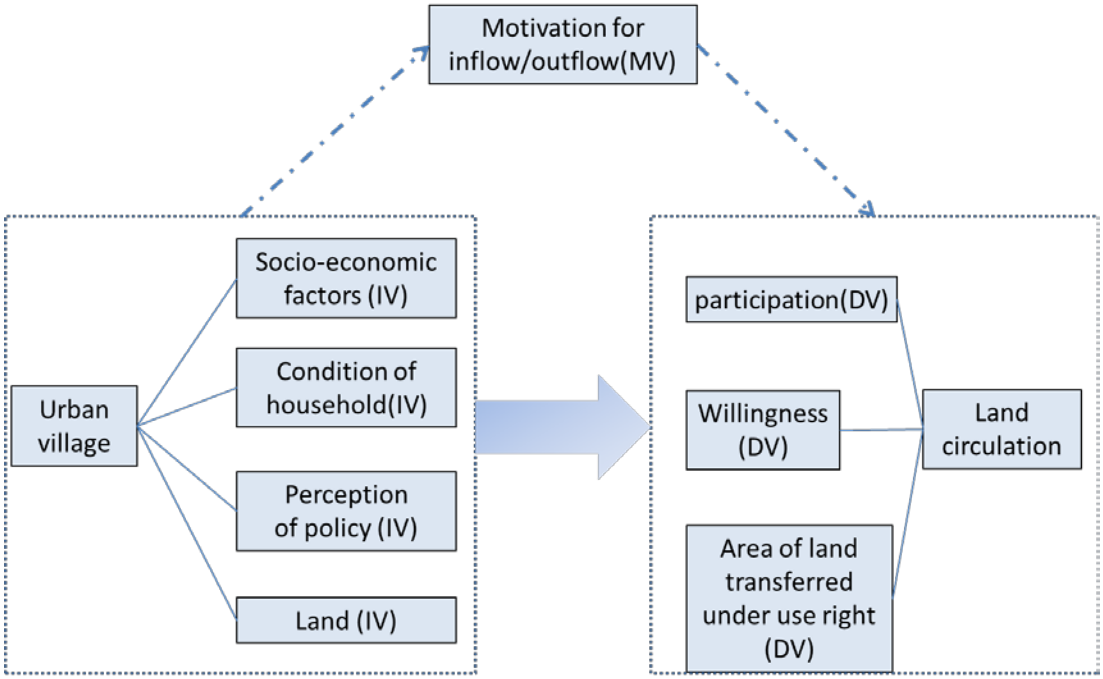
Although surveys in various areas have different conclusions, based on the data of land use right transfer, they have reached agreements on these points. Firstly, the development of non-agricultural industry affects the regional economic environment. With the development of regional non-agricultural industry, the second and third industries provide farmers with opportunities of non-agricultural employment, the percentage of non-agricultural income and the dependence of farmers on land. Gradually, a considerable percentage of rural households will be more inclined to lease land because of the increase in opportunity costs. The rate of land circulation will accordingly increase (Liu and Guo 2015). Secondly, farmers with the higher level of education have stronger ability to mastered agricultural and non-agricultural technology and related information. So they have advantages in getting employment opportunities and higher income whether in the form of agriculture or non-agriculture. At the same time, because of their strong desire to learn, they have the tendency to move out and get long-term jobs in the city in the condition that the income of non-agricultural work is relatively stable. Some of them who are relatively wealthy even choose to settle in the town. As a result, if their families are short of labours, they are most likely to transfer their land to others. Meanwhile, farmers with higher agricultural technology or business experience will expand their operation scale to develop modern agriculture. So they are desired to get more land (Liu and Lan 2015). Thirdly, households with higher income can get more funds to invest in large-scale operation, which makes the inflow rate of land in higher level. On the other hand, compared with other occupation, the return on investment of planting is lower. The lower percentage of the first industry in income is, the more income from other source is (Li and Yang 2002). Therefore, the degree of attention to land management will be less, and outflow rate of land will be high. Lastly, Farmers' risk awareness has an impact on their decision-making behaviours. With the globalization of economic, China's rural areas have entered a high-risk period. In a risk society, farmers face the dual uncertain environment inside and outside. Farmers' abilities to collect and process information are different, which caused the variety of risk consciousness and preferences of farmers (Ogurtsov and Van et al 2008). The current rural areas lack the formal mechanism to avoid risk, and most of farmers

[3] Ye, Jiang et al 2006, Nguyen, Tran et al 2016

have a strong sense of risk. Therefore, the aversion to risk encourages farmers to take conservative actions and avoid participating in the land circulation.

Besides the individual condition of farmers, the policy and social welfare are also significant factors affecting farmers' willingness (Bao, Xu, et al 2009). As is known to all, land is the most important possession for farmers, especially for the aged, and production on the land is the last safeguard for farmers. The traditional form of rural old age security in China is family support, and one of the main functions of household land is providing protection for the aged. If this unique function is replaced by the land endowment insurance, farmers' dependence on the land will be greatly weakened. Furthermore, if the institution barriers like the *hukou* system are eliminated, farmers will be more willing to transfer their land use rights (Khantachavana, Turvey et al 2013). What's more, as a non-productive cost, transaction cost is worthy of attention. Before the reform of agricultural tax in 2006, the supply and demand sides need to negotiate for how to undertake agricultural tax burden, which increases the cost of negotiation and execution in the process of land circulation, which impeded the development of land market (Jin and Klaus 2009). Nowadays, although the reform of agricultural tax and fee has been cancelled for ten years, the hidden transaction costs that hinder the rural land circulation in reality still exist. For example, land property rights are not clear and unstable, which add the cost of trades. The current rural policy is also trying to reduce transaction costs by further ensuring the farmers' land property rights.

2.2 Conceptual Framework



Based on literatures, land circulation can be affected by many factors, including the development of non-agricultural industry (Liu and Guo 2015), education level (Liu and Lan 2015), income (Li and Yang 2002), perception (Ogurtsov and Van et al 2008), policy, social welfare (Bao, Xu, et al 2009) and so on. All these factors can be categorised into four variables. According to the materialistic dialectics in philosophy, things are impelled to move and change by both external causes and internal causes. On the one hand, the transfer of land is driven by one external cause, socio-economic environment, where the village locates. On the other hand, it is propelled by three internal causes, the condition of household, their perception of policy and the land they own. These four variables are independent variables, some of which can be combined together to create the middle variable motivation. For example, the income of household is low, and the village is near the city where they can find another job. One of family members will give up agriculture to find work with higher income in city. The number of labour in agricultural production is less. In this case, the independent variables, condition of household and socio-economic factors, create the middle variable lack of labours, which is the motivation for outflow[4]. The concept land circulation can be divided into three dependent variables, area of land transferred under use right, participation and willingness in land circulation. Each of dependent variables is affected by four independent variables above, which will be explored in this paper.

[4] Selling land under use rights

Chapter 3 Research Design and Methods

This chapter describes the research strategies and methodologies that are used to answer the research question and sub-questions. It explains the concepts and variables referred to how to measure them. Then it clarifies how to collect and analyse data in details.

3.1 Revised Research Question(s)

Quite a lot of literatures have discussed the influential factors in land circulation. Furthermore, they also introduced the condition of urban villages and current land policy. Based on that, my research tests relative theory in two urban villages in Beijing and assume that land circulation is more wide spread in villages in the centre of city those in the suburbs. Nevertheless, this research just chose some samples in the village to fill in questionnaires and narrowed its focus on part of the influential factors.

The main question of this research is:

Is land circulation more widespread in urban villages in the centre of city than those in the suburbs? What are reasons for this?

The specific sub-questions are:

1 what is the difference between urban villages in the centre of city and those in the suburb?

2 what is the difference of land circulation in these two villages?

3 For what reasons do owners transfer their land use right?

3.2 Operationalization: Variables, Indicators

According to the theoretical framework in chapter 2, the following table details the operationalization of the conceptual framework in chapter 2. It shows the variables, indicators which are used to answer the research questions, and it includes data resources.

For the operationalization, firstly, it describes the characteristics of these two urban villages from 4 aspects. One is located in the centre of city and the other is in the suburbs. Secondly, it describes the condition of land circulation in urban villages from area, legality and willingness. Thirdly, it compares the scale and participation in these two villages, including the implement of related policy. Based on the data of characteristics of villages and condition of land circulation, it analyses the relationship between them and explore which characteristics cause the difference in two villages. At last, it explains reasons why villagers participate in land circulation.

Table 3 Operationalization

Sub-question	Concept	Variable	Indicator	Units	Data source
What is the difference between		Land	Area of arable	m^2	Questionnaires

urban villages in the centre of city and those in suburb?			land and homestead		
Urban village			The location of land	descriptive	Map
			Accessibility	Null	Questionnaires
		Socio-economic factors	The land price of land use right	Yuan/m^2	Web of National Statistics Bureau
			GDP per capita in this district	Yuan	Questionnaires
		Condition of household	Age	Null	Questionnaires
			Social insurance[5]	Null	
			Income every year	Yuan	
			The percentage of agricultural income	%	
			Occupation	Null	
			Education level	Nominal in number	
		Perception of policy	Comprehension of policy	Null	Questionnaire
			Acceptance of pricing mechanism	Null	
			Acceptance of the management of transaction	Null	
			Acceptance of laws and regulation	Null	

Sub-question	**Concept**	**Variable**	**Indicator**	**Units**	**Data source**
What is the difference of land	Land circulation	Area of land transferred under	Area of land flowing in[6]	m^2	Questionnaires

[5] Whether the villager has the insurance that can cover the living cost when they are old and pay for the medical expenses when they are ill

circulation in these two villages?		use right	Area of land flowing out[7]	m^2	
		Participation in land circulation	Percentage of people who have transferred their land use rights	Null	
			The type (lease, mortgage et al)	Null	Interviews
			Contract/oral	Null	
		The willingness to transfer land use right	Percentage of people willing to participate in land circulation	Null	Questionnaires
			The type people want to transfer land use rights	Null	Interviews

Sub-question	**Concept**	**Variable**	**Indicator**	**Units**	**Data source**
For what reasons do owners transfer their land use right?	motivation	motivation for inflow	Low price of land use right	descriptive	Interviews
			Help of government		
			Economies of scale[8]		
		motivation for outflow	Benefits from transfer[9]		
			Lack of labours in household		
			Higher income of other jobs		

[6] area of land that the household buy under use right

[7] area of land that the household sell under use right

[8] According to the theory of land economics, the long-term average cost can be lower when the production scale expands.

[9] The land use right can be considered as the capital to invest and get returns of investment.

3.3 Research strategy

This research chooses the combination strategy of survey and case study. This research tests whether land circulation is more widespread in urban villages in the centre of city than those in the suburbs and explains the reasons for this phenomenon. It is both a testing and explanatory objective. It needs quantitative data to test the hypothesis and explain the difference primarily. Qualitative data are also needed as the supplement for further explanation. The budget restrains the research areas in two typical urban villages to study the mechanism in it. For the specific urban villages, the study concentrates on depth rather than width. Questionnaires were used to investigate the basic condition of villages, and interviews are done to know villagers' perception better. For these characteristics, the combination strategy of survey and case study is suitable for it.

3.4 Data Collection Methods

Most of data were collected by questionnaires filled by villagers. In this research, it chose 2 typical urban villages. One is Xibeiwang Town in Haidian District, which is located in the centre of Beijing, and the other is Huairou Town in Huairou District, which is in the suburb. These two villages are not far away from each other, so the natural environments like the fertility of land are similar, which can help to control the irrelevant variables to make the result more reliable. Xibeiwang Town belonged to rural areas in the 20th century. With the development of Haidian District, graduates, and workers from other provinces gathered here, so the city expanded and incorporated it in the urban area. It is near to the industrial park and the housing built by villagers themselves can also meet the low-cost living demand of people who drift in Beijing. Thus, the economic activities in Xibeiwang Town transferred from pure agriculture to non-agriculture including housing rental. It is a typical urban village near the centre of Beijing. On the contrary, Huairou Town is in the suburb. Beijing government build many university and research institution there, so the whole area develops with technology. Huairou Town is gradually surrounded by the city, although it is far away from the centre. The population density there is lower than in Xibeiwang Town, and most of the agricultural land has not been expropriated. Therefore, the condition of Xibeiwang Town and Huairou can be listed together for contrast.

Figure 3 Location of 2 urban villages

In each village, 200 questionnaires were distributed to 200 sample households. In China, the contracted land management right are owned by household not individuals, so this survey consider household as research unit. People who are registered on the same permanent residence booklet in the hukou system and live together can be seen as a household. In the questionnaire, some similar or further questions were written for triangulation. For example, in order to know if they are clear about land policy, the researcher not only asked this question directly, but also asked questions of basic policy knowledge to test their comprehension. It gathered information both from people, literature, documents and websites to ensure the validity of research. Besides questionnaires, semi-structured interviews were conducted as a way of triangulation and explanation. They can be used to check the validity of data and contribute to deeply understand the context and interpret results as the supplement. The researchers chose about 20 typical respondents to talk about reasons for

transferring their land use rights. In each village, we chose 2 leaders and 8 villagers to conduct the interview. We can learn more about the general condition of the whole village and the propaganda of land policy by talking to village leaders. For the villagers, the target interviewees were chosen according to 3 standards. Firstly, they should engage in land circulation and be aware of relative policy. It is important to ensure that the interviewees are familiar with the land circulation market and the interviews can be deeper. Additionally, they should live in this village for at least 3 years. This research consider geographic difference as an important influential factor, so people who moved here recently are not typical enough. Another important standard is that the interviewees have the willingness and time to accept our interview. Without resistance, the information gotten will be valid and abundant. Therefore, with the help of village leaders, we can know a group people who are potential targets, and several related questions were asked when filling their questionnaire. If they meet the demand we require, we invited them to participate in our interviews.

In this research, the variables and indicators are chosen with reference to the literature review, which can ensure that all the variables and indicators were meaningful and measurable for analysis. The data from questionnaires were triangulated with the information provided from other sources. Furthermore, the similar natural environment and population of two villages guarantees the research samples were comparable. For reliability, the definitions of the concepts are explicit in the paper, and it avoids misunderstanding or confusion about our research.

3.5 Data Analysis Methods

Based on the main question and sub questions mentioned before, the main strategy used is combination of survey and case study. The main data analysis methods were comparison and modeling. Survey is used to collect quantitative data and study the general condition of each village. Case study is used because there are too many urban villages in Beijing, and they are comparable in some aspects. In order to figure out the relationship between land circulation and influential factors, SPSS software were used to analyse the quantitative data. The difference between two urban villages and the difference of land circulation in them were checked t-test. Then, in order to figure out the relationship, logistic model were used to analyse discrete data. The results of quantitative analysis will be explained according to literatures and interviews. The interviews were used to further analyse reasons for transferring their land use rights. The statement of respondents can help to explain how these factors influence land circulation and the mechanism in it as the supplement.

For the quantitative analysis, the dependent variables participation and willingness are binary discrete variables and do not conform to the normal distribution in statistics, so they cannot be estimated by the least square method. Additionally, they do not meet the requirements of general linear regression and cannot be directly predicted in multivariate linear regression. The factors that affect three dependent variables are mostly composed of disorder choices. Econometric models which use results of decisions as independent variables are called binary choice model. Since the dependent variable of the binary discrete choice model is nonlinear, it should be transformed into a utility model to evaluate. Logistic model is a binary discrete choice model which regards logical distribution as the probability distribution of random

error, which is suitable for the analysis of choice behaviour in accordance with the principle of utility maximization. Therefore, it is the most ideal and widely used model of individual decision behaviour research (Meng and Niu 2011).

In logistic model, if the quantity of observation samples is n, and Y is a random variable, whose value is 1 or 0. Xi (i=1, 2... n) are independent variables associated with Y. The form of the Logistic probability function is:

$$P = \frac{\exp(Z)}{1+\exp(Z)} \qquad (1)$$

$$Z=b0+b1X1+b2X2+\ldots+\square I \qquad (2)$$

In this model, P is the probability of villagers' behaviour or willingness. Z is the linear combination of variable Xi (i=1, 2... n), and Xi are factors that influence villagers' behaviours and willingness to participate in land circulation. B0 is a constant and has nothing to do with Xi, and bi (i=1, 2... n) are the regression coefficients that represent the contribution of Xi to P. At last, $\square I$ is error term.

Chapter 4: Research Findings

4.1 Findings

4.1.1 Introduction

This chapter is composed of quantitative analysis and qualitative analysis. The first three parts of section 4.2 focuses on answering the first two sub-questions. They are what is the difference between urban villages in the centre of city and those in the suburb and what is the difference of land circulation in these two villages. After aggregating data in the questionnaires, it compares the condition of village in the centre of city and in the suburb as well as the land circulation there, and then explores which factors have an influence on villagers' behaviours and willingness. The last part of Section 4.2 summarizes the interviews to find their motivation of transferring land to support and explain the results in the quantitative analysis better. The main findings of this research are as follows.

Firstly, villagers in Huairou Town (in the suburb) may depend more on agriculture, and their income is less than income in Xibeiwang (in the centre of city) Town. At the same time, their comprehension and acceptance of policy are similar. Secondly, area of land flowing out and the percentage of people who have transferred their land under use rights in Xibeiwang Town is more than those in Huairou Town. Thirdly, men, elderly people, villagers with higher education level and income may be more active and willing to participate in land circulation. Age, education level, part-time job and insurance seem to have a positive relationship with the area of land flowing out. The effects on inflow of land are in reverse. However, the influence of another variable perception is confusing. The acceptance of laws/regulation tends to have the negative effects, while the effect of comprehension of policy, acceptance of pricing mechanism and management of transaction is positive. At last, cases from interviews are clarified into six types. Three reasons for inflow are low price of land use right, help of government and economies of scales, and three reasons for outflow are benefits from transfer, lack of labours in household and higher income of other jobs.

This research uses the logistic model analysis to explore factors that may affect land circulation. The data were collected by questionnaires and interviews in Xibeiwang Town and Huairou Town in Beijing in July 2017. The independent variables and dependent variables are measured by indicators in the quantitative analysis, and some of their definitions are given as follows.

Table 4 Definitions of the quantitative indicators

indicator	definition	unit
Area of arable land	The area of arable land that the household has the rural contracted land management right	m^2
Area of homestead	The area of arable land that the collective allocate to household that they can build their house	m^2

area of land flowing in/out	area of land that the household buy/sell under use right	m^2
Income	The income per capita in the household in 1 year	Yuan
Social insurance	Whether the villager has the insurance that can cover the living cost when they are old and pay for the medical expenses when they are ill	Null
Percentage of agricultural income	(Income from agriculture/total income)*100%	Null
Age/Gender	The age/gender of the head in the household. Head means this one is registered on the first page of permanent residence household booklet. Generally, head is dominant in making decision like whether they will transfer their land under use right.	Null
Education	The highest education level of the family members	Null
Accessibility	The distance between the land the household has use right now and the main cement road.	Null
Comprehension	How much they know about the laws and policy of land circulation	Null
Acceptance of policy	Whether they are satisfied with the policy related with land circulation market from the following aspect: the pricing mechanism, the management of transaction and legislation	Null
Willingness	If the policy allows them to transfer their land in the ideal market （it provides benchmark price and the transaction is strictly in legal process）, will they be willing to participate in the land circulation	Null

These indicators come from questionnaires, and the options are assigned by number in the process of data analysis. Most of indicators are nominal, and their values are re-coded in the following table to make a comparison and the logistic model.

Table 5 value of the quantitative indicators

Indicator	value
Gender	0-male 1-female
Age	1:0-25 years old 2:26-35 years old 3:36-45 years old 4:46-55 years old 5:>55 years old

Education	1-primary school or lower 2-junior high school 3-senior high school 4-technical school 5-university
Occupation	1-jobless 2-totally depend on agriculture 3-mianly depend on agriculture 4-mainly depend on other work 5-totally depend on other work
Accessibility	1-very convenient 2-convenient 3-less convenient 4-not convenient
Acceptance of policy	0- not satisfied with 1-be satisfied with (evaluate from the price mechanism, the management of transaction and legislation respectively)
Comprehension of policy	1-know a lot 2-know a little 3-do not know
Willingness	0-unwilling 1-willing

The questionnaires were distributed to villagers in two urban villages, and the distribution is as follows.

Table 6 quantitative data-distribution of respondents

Category		**Huairou Town (in suburb)**	**Xibeiwang Town (in the centre)**
Gender	Man	117	107
	Women	83	93

Age	0-25	44	57
	26-35	15	22
	36-45	25	20
	46-55	48	50
	>55	60	51
Education level	Primary school or lower	66	43
	Junior high school	78	83
	Senior high school	35	42
	Technical school	15	20
	University	6	12
Area of land (agriculture land and homestead)	0-5000	173	185
	5001-10000	20	11
	>10001	7	1

The quantitative research answers the research question from the statistic perspective in the macro level. Although the logistic model reveals the relationship between the land circulation and independent variables, statistical analysis is not enough to explain the mechanism in land circulation. It is necessary to conduct qualitative research to know the motivation for transferring land. The qualitative analysis focuses on 20 interviews, including 4 interviews with village leaders and 16 with the villagers, and interviewees can be divided into 6 categories.

Table 7 categories of interviewees

Urban village	**Huairou Town (in suburb)**	**Xibeiwang Town (in the centre)**
Flow in	4 (2 large-scale crop-production farmers, chicken farmer, workers in the city)	4 (a young man who get married recently, 2 villager who works in Beijing for years, a women who grows vegetables)
Flow out	4 (2 farmers who have other part-time job, villagers who bought flat in the city, worker in the local rural enterprise)	4 (2 villagers who have spare houses, a man who find new work in city, the old who does not work now)
Village leaders	2 (village directors and officers)	2 (village directors and officers)

4.2.2 Difference between two urban villages

Table 8 Difference between two urban villages

Variable	Indicator	Huairou Town (in suburb)		Xibeiwang Town (in the centre)	
		Mean	***Standard Deviation***	***Mean***	***Standard Deviation***
Land	Area of arable land (m^2)	1563.31	3128.35	922.71	2590.26
	Area of homestead (m^2)	288.72	183.97	197.48	136.11
	Accessibility	1.82	0.78	2.08	0.82
	location	40.30° N, 116.64° E		40.05° N, 116.26° E	
Socio-economic condition	Average price of residential land under use right in the whole district (Beijing Bureau of Statistics, 2017)	42554 Yuan/m^2		63408 Yuan/m^2	
	GDP per capita in the whole district in 2016 (Beijing Bureau of Statistics, 2017)	69209 Yuan		144370 Yuan	
Condition of household	Income (Yuan)	14775.71	16260.19	23835.82	13021.40
	Education	2.09	1.04	2.38	1.11
	Percentage of agriculture income	13%	0.28	6%	0.19
	Insurance	57%	0.50	49%	0.50
Perception of policy	Comprehension of policy	2.73	0.51	2.80	0.44
	Acceptance of pricing mechanism	33%	0.471	26%	0.440
	Acceptance of the management of transaction	37%	0.483	33%	0.470
	Acceptance of laws and regulation	49%	0.501	42%	0.494

In this data table, the mean area of arable land in Huairou Town is 1563.3 m^2, while the value in Xibeiwang Town is only 922.71, which reveals that villagers in the suburb likely still depend on agricultural production. Additionally, in the interview, some of villages in Xibeiwang Town told me that their arable land is expropriated for construction of city, which may be an explanation for that. The standard deviation for both villages is big, which reflects that the data fluctuate acutely. Therefore, some households still keep lots of land for

production, even though others have found other jobs. The mean of accessibility in Xibeiwang Town is a little larger than that in Huairou Town. The socio-economic condition assesses the development of the district where urban villages located. The land price and GDP per capita in Xibeiwang Town are significantly higher than Huairou Town. This might indicates that the urbanization of Beijing has more influence on urban villages in the centre and brings more employment opportunities for them. The high land price can also increase the price of transferring land use right between individuals, which stimulates villagers to leasing their homestead.

Condition of household is described by 4 indicators. The income per capita every year in Xibeiwang Town is nearly two times as much as in Huairou Town, which is similar to the GDP per capita mentioned above. The percentage of agriculture income in Huairou Town is more than two times that of Xibeiwang Town, which can be partly explained by the area of arable land before. The education level in the centre is slightly higher than those in the suburb, which reflects that village in the centre gets more benefit from the city surrounding it. In contrast, the percentage of villagers who have insurance in Huairou Town is 57%, higher than in XIbeiwang Town which may be caused by the Chinese farmer-benefiting policy[10]. The perception of policy is indicated by comprehension and acceptance. It can be seen from the table that their comprehension is similar, and the numerical value is not high, which means that villagers are not aware of policies. For the acceptance, less than half of villagers are satisfied with the pricing mechanism, government management and regulation, and the dissatisfaction may weaken their enthusiasm to transfer their land use right in the land market. The deviation is relatively high for these four indicators, which manifests that the samples are scattered, and villagers' perceptions differ markedly.

In order to prove that the difference between two villages is notable, t-test by SPSS is selected to show it in quantitative form as follows. The null hypothesis for this t-test is that the condition of households and perception of policy are not different in these two villages.

Table 9 t-test for the difference of household and perception

Variable	Indicator		F	Sig.	t	df	Sig. (2-tailed)
Land	**accessibility**	Equal variances assumed	.016	.900	-3.196	398	**.002**
		Equal variances not assumed			-3.196	396.727	.002
Condition of household	**income**	Equal variances assumed	5.479	.020	-4.546	398	.000
		Equal variances not			-4.546	357.984	**.000**

[10] The new rural social endowment insurance issued in 2009 is aimed at ensuring the essential life of rural residents. Farmers who have it can receive a monthly pension when they are 60 years old.

		assumed					
	education	Equal variances assumed	3.316	.069	-2.702	398	**.007**
		Equal variances not assumed			-2.702	396.151	.007
	percentage of agriculture income	Equal variances assumed	24.110	.000	2.939	398	.003
		Equal variances not assumed			2.939	349.349	**.004**
	insurance	Equal variances assumed	3.740	.054	1.604	398	**.109**
		Equal variances not assumed			1.604	397.963	.109
Perception of policy	**Comprehension of policy**	Equal variances assumed	8.223	.004	-1.477	398	.141
		Equal variances not assumed			-1.477	389.233	**.141**
	Acceptance of the management of transaction	Equal variances assumed	2.796	.095	.840	398	**.401**
		Equal variances not assumed			.840	397.700	.401
	Acceptance of laws and regulation	Equal variances assumed	5.679	.018	1.507	398	.133
		Equal variances not assumed			1.507	397.917	**.133**
	Acceptance of pricing mechanism	Equal variances assumed	9.382	.002	1.536	398	.125
		Equal variances not assumed			1.536	396.092	**.125**

T-test can test whether the means of variables are equal for 2 groups, and it is usually used to compare continuous variables. The indicators listed above are partly nominal, but their numerical values are not only used to identify types. For example, education is divided into 5 levels from primary school or lower to very university, assigned by number 1 to 5, and the bigger the number is, the higher the education level is. Therefore, the number has numerical significance, and t-test can also be used. The most important parameter in the t-test is the value of significance. This significance parameter in the fifth column manifest whether variances are equal in samples, and the significance parameter in the eighth column reveals

whether the difference between these two villages is significant. For each indicator, if the value of significance is smaller than 0.05, the null hypothesis is rejected. The null hypothesis for the first significance is all variance of samples are equal. If equal variances are not assumed, for the second significance, only the value in the second row is meaningful. In order to show them clearly, they are marked in bold in the table. From those data, it can be concluded that income, accessibility and percentage of agriculture income are significantly different in two villages. Education, insurance, comprehension of policy, acceptance of pricing mechanism, management and regulation may be slightly different, but the probability is small from the perspective of statistics.

4.2.3 Difference of land circulation in two urban villages

Table 10 Difference of land circulation in two urban villages

Variable	Indicator	Huairou Town (in suburb)		Xibeiwang Town (in the centre)	
		Mean	***Standard Deviation***	***Mean***	***Standard Deviation***
Area of land transferred under use right	Area of land flowing in (m^2)	4.15	43.84	5.66	26.32
	Area of land flowing out (m^2)	2.27	18.58	12.55	74.67
Participation	Percentage of people who transferred their land under use rights	44%	0.50	69%	0.46
Willingness	Percentage of people willing to participate in land circulation	88%	0.33	94%	0.25

As shown in the table, area of land flowing in Xibeiwang Town and in Huairou Town does not vary a lot. Conversely, area of land flowing out in Xibeiwang Town is about eight times as much as the size of Huairou Town. This phenomenon can be explained in two aspects. On the one hand, it is easier for indigenous villagers in the centre of city to find other work, so they will transfer spare agricultural land to others. On the other hand, the land price in the central area is high, so villagers are willing to lease their homestead to people who come from other places but work here. The standard deviations for both villages are high compared with the mean, so samples selected in the survey are widespread, and condition of household is diverse. The percentage of participation is in the same trend compared with the area of land flowing out. Except two reasons mentioned before, this phenomenon may be related with their ability and enthusiasm of acquiring related knowledge, like perception of policy and education level, which will be tested in the next section by logistic model. The percentage of willing villagers is high to 88% and 94%, compared with the data of participation. This comparison reveals that they are interested in getting more benefit from land circulation, but

they are hesitate to put their ideas into practice. Combining this with the data of acceptance of policy analysed before, we can suppose that the nonstandard land market has hindered the land circulation. From the interviews with villagers who participate, more information about the regulation of land market can be got. In the standard process of transferring their land use right, traders should apply to the collective and request them to confirm the area and range of the land before signing the contract. However, some interviewees just signed the contract by themselves, so their rights will not be guaranteed if there are any conflicts in the future. What's more, this reflects the phenomenon that many farmers do not know how to participate in land circulation, which can be a triangulation with the results of questionnaires.

Table 11 t-test for difference of land circulation in two urban villages

Variable	Indicator		F	Sig.	t	df	Sig. (2-tailed)
Area of land transferred under use right	Area of land flowing in	Equal variances assumed	.430	.512	-.416	398	**.677**
		Equal variances not assumed			-.416	325.983	.678
	Area of land flowing out	Equal variances assumed	13.767	.000	-1.890	398	.060
		Equal variances not assumed			-1.890	223.538	**.060**
Participation	Percentage of people who transferred their land under use rights	Equal variances assumed	23.080	.000	-5.306	398	.000
		Equal variances not assumed			-5.306	396.095	**.000**
Willingness	willingness	Equal variances assumed	14.948	.000	-1.902	398	.058
		Equal variances not assumed			-1.902	371.065	**.058**

The null hypothesis for this table is area of land transferred under use right, participation and willingness are not different between two urban villages. The same as the previous test, if the value of significance is smaller than 0.05, this null hypothesis can be rejected. The results of t-test are shown in table 11. According to table, the parameter significance of area of land flowing out is 0.06, a little higher than 0.05, so there is not enough evidence to deny the null hypothesis. Although the mean of area of land flowing out presents a great difference, the t-test cannot prove it. The significance of participation is apparently lower than 0.05, so the difference is notable. The percentage of people participate in land circulation in Xibeiwang

Town is significantly higher than in Huairou Town from statistics, which represents that villagers in Xibeiwang Town join in land circulation more actively.

4.2.4 Factors affecting land circulation

Based on the analysis before, this section tries to explain why the land circulation is different in these two urban villages. In order to answer this question, the mechanism in land circulation should be figured out. The dependent variables of the study is area of land transferred under use right, participation and willingness. Logistic models are made to explore the relationship between land circulation and urban village. Different combinations of indicators in the equation are tried in SPSS, this paper only shows the regression model that have the best simulation effect.

The results of regression calculated by SPSS are added in a table in the appendix 1. The correlation coefficient of each variable in the equation are calculated and listed in that table. The positive sign represents the positive correlation, while the negative sign represents the negative correlation. The significance of correlation manifests whether the correlation is significant. Only when the correlation coefficient of variable is smaller than 0.05, the relationship between dependent variable and independent variable is significant. The results are analysed only by the positive and negative sign of the correlation coefficient. If this coefficient is positive, the values of dependent variable and independent variable are in the same trend. If it is negative, the values of them are in the opposite trend. Therefore, the relationship between dependent variable and independent variable can be inferred from the trend, which is listed in the tables.

4.2.3.1 Factors affecting inflow/outflow of land

The inflow and outflow of agriculture land are predicted respectively. In the model of inflow, the area that the household has bought the land under use right is the dependent variable, and it is classified into $0m^2$ and more than 0 m^2, represented by number 0 and 1. 0 means they keep their agriculture land unchanged while 1 means they have bought the agriculture land under land use right. In the model of outflow, the area that household has transferred land to others under use right is the dependent variable, and it is also classified into 0 m^2 and more than 0 m^2, represented by number 0 and 1. 0 means they keep their agriculture land unchanged while 1 means they have sold the agriculture land under land use right.

Table 12 the inflow and outflow of agriculture land

Variables	Indicator	Inference from regression analysis
Condition of household	Age	Older people tend to sell land under use right while younger people want to buy more land under use right.
	Education	People with higher education level tend to transfer their land to others.
	Occupation	Villagers who have other work tend to transfer their land to others.
	insurance	Villagers who have the insurance tend to sell their land to others under land use rights rather than keep it.
	Percentage of	Villagers who depend on agriculture tend to transfer their land to others under

agriculture income	land use rights.

The results of regression calculated by SPSS are added in the appendix 1. Some inferences made from this table are similar to other surveys. The age affects the land circulation in two opposite aspects. On the one hand, young people have more chances to find new jobs in the city, so they may spend less time on planting and transfer their land to others. On the other hand, the old is not as strong as young people and cannot make the best of their land, so it is better to lease them to others. It is difficult to know which aspect is dominant, so the age may have positive effects on both inflow and outflow of land. People with higher education level can change career to get more income from non-agricultural production, so some of their land turns to be vacant and then transferred to others. The situation is same for occupation and percentage of agriculture income: people who depend less on agriculture likely have more land flowing out and less land flowing in. The insurance can guarantee the medical cost and living expense in late life: people have insurance will likely not rely less on their land. Therefore, it might promote the outflow of land and decreases the inflow.

4.2.3.2 Factors affecting participation

Logistic model can also be used to predict the second dependent variable participation in the land circulation. This section only explores factors affecting the transfer of agriculture land because a few villagers have transferred homestead in the questionnaire, so the data is not enough to make the model. In this model, whether the household has participated is the dependent variable, and it is represented by number 0 and 1. 0 means they keep their agriculture land unchanged while 1 means they have transferred or bought the agriculture land under land use right.

Table 13 participation in land circulation

Variable	Indicator	Inference from regression analysis
Condition of household	Gender	Men participate in land circulation more actively than women.
	Education	People with higher education level tend to participate actively.
	Income per people	People with higher income participate in land circulation more actively
Land	Accessibility	The transaction of land in good location under use right is more frequently.
Perception of policy	Comprehension of policy	People who know more about land policy participate in land circulation more actively
	Acceptance of pricing mechanism	People who are satisfied with the pricing mechanism in the land circulation market participate more actively
	Acceptance of the management of transaction	People who are satisfied with the management by the government participate more actively

	Acceptance of laws and regulation	People who are not satisfied with the laws and regulation of land participate more actively

In this regression, the correlation coefficient of income per capita is 0.03, which means it has a strong relationship with the initiative of participation. Significances of other variables are not small enough, so the fitness of this model is not very ideal. However, we can still analyse the results only by the positive and negative sign of the correlation coefficient. The explanations for these indicators are as follows. The differences of physiological characteristics between male and female bring differences of employment ability, so women are at an unfair disadvantage and usually left in rural areas to be the main strength of agricultural production. Therefore, women are more inclined to maintain land, and they do not need to get more land due to physical constrains (Qiu and Xu 2009). Additionally, the average education level for male is higher than female in rural areas in China (National bureau of statistics of China, 2016), so gender affects education and further influences villagers' behaviours. Villagers with high education level know how to improve the efficiency of land use and increase their income by land circulation (Liu and Lan 2015).

The rural land use right market in China is dominated by the supply side for a long time, because the demand in the rural land circulation market is more than the supply. As long as farmers are willing to transfer the land use right, they can find people who want to rent the land (Tian 2008). Therefore, the land in a more convenient space is easier to be bought under use right. Some literatures[11] hold the view that farmers with better comprehension and acceptance of policy change land use right more frequently, but according to the result, the acceptance may not be related with initiative. The influence of acceptance of regulation is adverse to pricing mechanism and management. People who are not satisfied with laws and regulation participate more actively, which cannot be explained by literatures. There may be some errors in the data or some villagers give the wrong choices. The comprehension of policy has the positive effect on participation, which means the more they know, the more active they participate. Another evidence for that is from interviews. According to the interview with village leaders, the propaganda of related policy has promoted land circulation in the village. After introducing the legal process of land circulation in the billboard and organizing activities to answering questions on-site, more farmers come to the administration buildings to register their transaction.

4.2.3.1 Factors affecting willingness

The third dependent variable willingness to engage in the land circulation is predicted by regression. This section explores factors affecting the willingness of participation in land circulation. In this model, whether the household is willing to participate in land circulation is the dependent variable, and it is represented by number 0 and 1. 0 means they are not willing to while 1 means they are willing to.

Table 14 factors affecting willingness

[11] Zhong, X., Li J.et al 2013, Chen H., 2015

Variable	Indicator	Inference from regression analysis
Condition of household	Gender	Men are more willing to join in land circulation than women.
	Age	Yong people are more willing to change their land use right.
	Education	People with higher education level are more willing to join in land circulation.
	Income per people	People with higher income are willing to participate in land circulation.
Land	Accessibility	The owners of land use right in good location are not willing to sell it under use right.
Perception of policy	Comprehension of policy	People who know more about land policy are willing to participate in land circulation.
	Acceptance of pricing mechanism	People who are satisfied with the pricing mechanism are willing to participate in land circulation.
	Acceptance of the management of transaction	People who are satisfied with the management by the government are willing to participate in land circulation.
	Acceptance of laws and regulation	People who are not satisfied with the laws and regulation of land are willing to participate in land circulation.

The results of regression calculated by SPSS are listed in a table in the appendix 1. It can be explained in the similar way as that in participation. The elderly usually have a sentimental attachment to their land. Although they cannot make the most of it, some of them do not want to transfer it. For the factor of accessibility, the condition is reverse compared with the inference drawn in participation. Owners of land in good location are not willing to sell it, while owners of land in inconvenient location do not want to operate it. People who get higher income can be divided into two parts. Some have non-agriculture job in the city and do not have time to cultivate their land, so they are willing to transfer land to others. Others are mainly farmers operate in modern technology and want to expand production scale for economies of scale. Both of them are likely willing to participate in land circulation. The relationship between willingness and acceptance of regulation is also confusing. According to studies in other place[12], the influences are all positive, but it has the negative effects here. The statement in the interview can partly explain this result. One farmer said "I want to transfer my land to others because I know my neighbours have made a great deal of money from that. Although I am not satisfied with the unclear laws and regulation, I cannot change that. Now that I can get benefit from participate in land circulation, I will try to do that". Therefore, it is guessed that although they are not satisfied with regulation, they only know they can get benefit from land circulation from other people, so they are willing to participate.

[12] Bao, Xu, et al 2009

Whether the acceptance of policy does influence farmers' willingness is still controversial here.

4.2 Reasons for owners to transfer their land use right

Most villages pointed out that they participate in land circulation to get more income or avoid loss. The village leader strengthened that the promotion of policy and the guide by officers can encourage villagers to participate. Their answers can be divided into 3 categories as listed in table 7. The comparison in table 8 reveals that villagers in the suburb still have much agriculture land, and they mainly depend on the agricultural production. In contrast, the land in the centre is mostly expropriated for city construction, and villagers find new jobs in city. Therefore, in the interview, farmers in the suburb talk more about transfer of agriculture land under use right while villagers in the centre talk more about homestead.

4.2.1 The reasons for inflow

Economies of Scale

The primary function of land is production and reproduction. Some researchers pointed out that scale management can be realized through land circulation, and then the purpose of increasing income can be achieved. According to the theory of land economics, the long-term average cost can be lower when the production scale expands. Economies of scale can be realized in two ways. On the one hand, when the agricultural land is moderately concentrated, agricultural production can be in large scale. On the other hand, when the land is scattered, only the large-scale management of agriculture land can be achieved. Modern agricultural production has the requirement on the scale of production. Only when the machinery and equipment purchased by agricultural operators is sufficient, agricultural production can reach higher level of efficiency (Wan and Cheng 2001).Two large-scale crop-production farmers said:

> Our income has increased sharply after land circulation. Now we grow pepper, eggplant, tomatoes, gluten beans and other vegetables in large scale, and the income from output increased to six thousand or seven thousands yuan per mu[13].

At the same time, the choice of farmers has also increased, changing from simple grain in the past to fruit, vegetables and sugar. One farmer also told me that two plots he planted before is too far away from his home and other plots. Therefore, he exchanges these two plots with another farmer who owns land near his home and expands the main field.

The villager director emphasized:

> The policy has a significant influence on villagers' motivation. Beijing municipal government has issued many policies to support the transfer of land contractual management rights, including financial subsidies and investment. Both large-scale management entities and farmers who transferred their land to others under use rights are rewarded.

Low price of land use right

[13] 1 mu=666.67 m^2

The land price in the centre of Beijing is so high that migrant workers from other provinces cannot afford to pay for the commodity house. In China, commodity house in the city is built on the land belonging to the state, and they can be sold to anyone who wants to buy it. In rural areas, on the homestead belonging to the collective, farmers can build their house, but it cannot be sold. The property right of farmer's house is not complete, and it can only be leased to others. Therefore, the demand for commodity house is large, which increase the housing price and rent (Wu, Zhang et al 2013 p.18). Xibeiwang Town located in a central place, but it is messy and lack of infrastructure. The low rent attracts many workers in the city. The worker Mr. Zhang said:

> I came here from Hebei Province in 2002 and works in a factory producing electronics. The work I do is the labour-intensive industry the salary of which is low. I cannot afford the high rent in the city, so I choose to lease farmer's spare house in villages. The house that I live now is near the factory, so I can walk there to save the transportation fees.

Farmer workers increase the demand for houses in urban villages, which stimulates the expansion of house on the homestead. Thus houses in urban villages are dense and lack planning as well as regulation. Although the environment is dirty and the house is dilapidated, the low price still attracts a large quantity of farmer workers to live there.

Help of government

Farmers in China have lived in poverty for years. For the sake of farmer's benefits, the government provides help in two aspects. For one thing, some technical experts are dispatched to teach practical technology and carry out skills training. With the introduction and promotion of new technologies, the level of skills and capabilities of farmers are improved. For another, the village leaders help them combine advantages of special agricultural resources and the market outside together. In Huairou Town, the leader said:

> With the guide of experts, villagers use new media to develop electronic commerce. They sell fruits, eggs, chicken products and handcraft on the internet, which exploit the market and create their brand.

A chicken farmer told me that he can sell more chicken and eggs through network, so he enlarges the breeding scale. With their help, the efficiency of production has been improved, and their products can be sold in more ways. Therefore, farmers buy more land under use right by land circulation to cultivate. Additionally, some farmers tried to develop modern agriculture and bought the agricultural fixed assets like irrigation equipment, the initial cost of which is high. Farmers will use them to cultivate more land to decrease the average cost, which is another motivation for them to get more land under use rights.

4.2.2 The reasons for outflow

Benefits from transfer

The land use right can be considered as the capital to invest. Recently, the government has continuously issued policies to construct agricultural industrialization base and accelerate industrial upgrading. In order to put the policy into practice, village leaders guide farmers to join in cooperatives by providing their land use rights as shares. In Huairou Town, the agricultural development cooperative was established by the company and government in the

process of land consolidation. This cooperative integrated company, farmer and land together. The dominant industry is the specialized production of vegetables, fruits and nurseries. In order to form the scale that is large enough to implement industrialized management and promote modern agricultural production, the land needs to be integrated by land circulation. Many farmers who rely on land resources are encouraged to use their land use rights as the investment to be shareholders of the company and share out the bonus. A man who works in this cooperative said:

> I transferred my land under use right and find a new job in this cooperative. Now, I can not only get the investment returns but also have salary for producing dehydrated vegetables. The income I have now is nearly two times as much as the profit of growing vegetables before land circulation. However, I also worry about the risk of shares. If the operation of cooperative management gets into trouble, all farmers who engage in will take the risk as the shares we own.

Lack of labours in household

Chinese population is aging at unprecedented level, and labours that can create values are in shortage. In rural areas, with farmers aging, the efficiency of cultivation is lower than before. Additionally, their children do not want to stay in the countryside and engage in agricultural production. As a result, young people change their careers, and aging farmers cannot make the most of their land. An elderly man who does not work now said:

> My health gets worse and worse in recent years, and I totally gave up cultivating in the last year. My son found a job in the city after graduating from university and is not willing to come back to inherit my land under use right.

Some elderly people are sentimentally attached to the land where he were born and keep it as the property to safeguard their later years. However, benefiting from social welfare in rural areas, he has the endowment insurance which can provides him with enough money to cover the living expense. What's more, arable land in China is so valuable that the government issued the policy that the land must not be abandoned by the owners of contract operative management right. Accordingly, he transferred his land to others who can make the most of it.

Higher income of other jobs

Urban villages are surrounded by city, which providing more employment opportunities for them. Thus farmers can get rid of the land and move freely. Farmers who engaged in agricultural production and casual work are called part-time farmers. A villager who has part-time job said:

> My daughter is going to enter the university, and it costs much money. I go to the city near home to be a mason when new houses are built there. The money I earn from that is far more than the benefits from agriculture, so I transferred some land to others.

Another villager who masters carpentry holds the view that income diversification can reduce risk to decrease loss. Crop yield is affected by climate, weather, soil and other uncontrollable factors. On the one hand, the price of agricultural products fluctuated continuously in the

market. On the other hand, farmers lack knowledge about economics and do not have time to pay close attention to agricultural product market. Mrs. Zhao said:

> The price of green peppers in previous years was high, which stimulated me to grow green pepper in the last year, but then its price decreased sharply. Therefore, compared with other jobs, agriculture is a hard work with low profit and some risk. If I can find another job in city, I will give up growing vegetables.

Part-time farmers can get double income and have more flexible time. More and more people try to find new work and cannot spare time for too much land. Consequently, they choose to transfer their land to others under use rights in land circulation.

Chapter 5: Conclusions and recommendations

5.1 Research conclusions

Urban villages occur with the expansion on city and cause many problems, so the government is studying on how to implement different policies to redevelop them. The land circulation is closely relative to the mode of redevelopment. The main objective of the research is to test whether land circulation is more widespread in urban villages in the centre of city than those in the suburbs and the reason for that. In section 1.3, a hypothesis is put forward. It assumes that urbanisation has more influence on urban villages in the centre than in the suburb. It is easier for villagers in the centre to find other job, and they depend less on agricultural production, so they will transfer their agriculture land to others under use right. Additionally, Chen, Guo et al (2011 pp.2) pointed out that "the demand for housing in the centre is very large, which increase the land price". Driven by the profit, people in urban villages there will lease their house. Based on these two points, it is supposed that land circulation is more widespread in urban villages in the centre of city than those in the suburbs. In this chapter, based on findings, the hypothesis seems to be partly verified, and specific sub-questions can be answered as follows:

What is the difference between urban villages in the centre of city and those in the suburb?

The arable land in Huairou Town (in the suburb) is almost two times the size of that in Xibeiwang Town (in the centre of city), which might indicate that people in villages in the suburb depend more on agriculture. Percentage of agriculture income in Huairou Town is correspondingly two times as much as that in Xibeiwang Town. At the same time, the income in Huairou Town is significantly less than in Xibeiwang Town, which is in the same trend with the socio-economic condition of the whole district where the village locates. It is likely that the urbanization of Beijing has more effects on urban villages in the centre and brings more employment opportunities for villagers there. In contrast, the differences of comprehension of policy, insurance, accessibility and education level between two villages are not obvious.

What is the difference of land circulation in these two villages?

Area of land flowing out and the percentage of people who have transferred their land under use rights in Xibeiwang Town is far more than those in Huairou Town. Other indicators, area of land flowing in and willingness, are similar in these two villages. In order to find the reason for the difference, the relationship between land circulation and urban villages is explored. Logistic model reveals that four independent variables, condition of household, socio-economic factors, land and perception of policy have an influence on dependent variables participation, area of land flowing in/out and willingness. According to the statistic results of SPSS, it is likely that men, elderly people, villagers with higher education level and income have participated more actively and also be more willing to engage in land circulation. Three indicators of perception of policy, comprehension of policy, acceptance of pricing

mechanism and acceptance of management, all have positive effects on both participation and willingness. An interesting result different from researches[14] in other areas is that the effect of the acceptance of laws /regulation tends to be negative. The statement in the interview can be used for triangulation here. Farmers who are not satisfied with the laws/regulation also might be willing to engage in as long as they can get benefits from that. Age, education level, part-time job and insurance seem to have a positive relationship with the area of land flowing out. The effects on inflow of land are in reverse. What's more, another thought-provoking result is the percentage of villagers who are willing to engage in is far more than that of villagers who have actually participated. This shows that the initial willingness of villagers is not consistent with the behaviours that occur in the end. More information is got from interviews. Some factors such as market environment, worries about risk and influence of their neighbours play a role in the final decision in the process of land use right transfer, so some villagers' behaviours are contrary to their willingness.

For what reasons do owners transfer their land use right?

Both temporary transfer of scattered land and long-time transfer of large-scale land with the guide of government under use rights proceed in these two villages. Reasons for transfer presented in the interview can be categorised into six types. Three reasons for inflow are low price of land use right, help of government and economies of scale. The change of environment outside and condition of household enable them to get more benefits or avoid loss from the land, which attract them to buy more land under use rights. Simultaneously, some villagers transferred their land use rights to others for three reasons: lack of labours in household, benefits from transfer and higher income of other jobs. Land can be used both as the natural resource for production and asset for investment. Farmers who get rid of the restraint of agriculture do not rely on land anymore. Villagers also use land use rights as the property for investment to improve the efficiency of land use.

In conclusion, villagers in Huairou Town might depend more on agriculture and get less income. The percentage of people who participate and are willing to engage in land circulation Xibeiwang Town is higher than in Huairou Town. Therefore, the answer to the research question is that land circulation is likely more widespread in urban villages in the centre of city than those in the suburbs. In order to find the reasons, the relationship between three dependent variables and four independent variables is explored. From the indicator level, age, education level, income, perception of policy and acceptance of pricing mechanism and management might have the positive effects on participation and willingness, while acceptance of policy has the negative effect. Age, education level, part-time job and insurance seem to have a negative relationship with the area of land flowing in. The effects on outflow of land are in reverse.

5.2 Recommendations

It can be calculated from the research that some villagers are willing to engage in land circulation, but they have not put it into practice, which may reflect that some farmers still

[14] Bao, Xu et al 2009, Ye, Jiang et al 2006

depend on the land for their living security and worry about the risk. The government can encourage them to transform to non-agricultural employment through the support of funds, technology and information. Based on the findings, advice can be put forward as follows. Firstly, the government can develop the secondary and service industry, because the scale of rural land transfer is likely positively related to the level of industrialization and urbanization in this region. Secondly, a large number of rural labours can be released by the modern agriculture, and the speed of land circulation will be accelerated. Thirdly, improving the education level of farmers and comprehension of policy can strengthen the self-protection ability and better ensure the land circulation proceed orderly.

5.3 Limitations and further researches

In this research, the data were collected in two urban villages in Beijing. The quantitative data were collected by questionnaires, and the qualitative data were collected by interviews. The t-test and logistic model were used to analyse data. Nevertheless, this research still has some limitations. Firstly, it only investigated two urban villages in Beijing, so the conclusion may not be applicable in other areas. Additionally, the data are not completely suitable to logistic model, so the conclusion of relationship between land circulation and urban villages cannot be ensued. What's more, although it use interviews for triangulation, the answers in the questionnaires may not be completely true. Therefore, suggestions for further research are given. The questionnaires and interviews can be done in other areas to test the conclusion drawn in this paper. The logistic model can be revised to make the imitative effect better. Furthermore, it is shown that the acceptance of laws/regulation may have the negative effects on participation in land circulation, which is reverse to the results in literature. More deep-interviews with villagers who are not satisfied with laws/regulations but engage in land circulation can be done to explore reasons for that.

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Appendix 1 the logistic model

Table 1 the regression of initiative of participation in land circulation

variable	B (correlation coefficient)	S.E.	Wald	df	Sig.	Exp(B)
Sex	-.305	.210	2.100	1	.147	.737
Education	-.092	.101	.827	1	.363	.912
Accessibility	-.035	.128	.075	1	.785	.966
Income per people	.182	.089	4.149	1	.042	1.199
Comprehension of policy	-.032	.224	.020	1	.888	.969
Acceptance of pricing mechanism	.064	.084	.587	1	.443	1.067
Acceptance of the management of transaction	.046	.065	.489	1	.485	1.047
Acceptance of laws and regulation	-.060	.047	1.627	1	.202	.942
Constant	.727	.730	.993	1	.319	2.069

Table 2 the regression of inflow of land

variable	B (correlation coefficient)	S.E.	Wald	df	Sig.	Exp(B)
Age	.389	.314	1.536	1	.215	1.475
Education	-.053	.246	.046	1	.831	.949
Occupation	-.055	.150	.135	1	.713	.946
insurance	-1.371	.524	6.845	1	.009	.254
Percentage of agriculture income	-16.414	3226.169	.000	1	.996	.000
Constant	12.784	3226.170	.000	1	.997	356340.152

Table 3 the regression of outflow of land

variable	B (correlation coefficient)	S.E.	Wald	df	Sig.	Exp(B)
Age	.116	.112	1.062	1	.303	1.123
Education	.004	.112	.001	1	.975	1.004
Occupation	.116	.068	2.934	1	.087	1.123
insurance	.093	.203	.209	1	.647	1.097
Percentage of agriculture income	-.148	.141	1.101	1	.294	.862
Constant	-.657	.730	.810	1	.368	.519

Table 4-4 the regression of factors affecting willingness

variable	B (correlation coefficient)	S.E.	Wald	df	Sig.	Exp(B)
Gender	-.515	.365	1.984	1	.159	.598
Age	-.082	.212	.149	1	.700	.922
Education	.119	.215	.306	1	.580	1.126
Accessibility	.197	.230	.738	1	.390	1.218
Income per capita	.174	.169	1.065	1	.302	1.191
Comprehension of policy	-1.332	.727	3.354	1	.067	.264
Acceptance of pricing mechanism	.379	.483	.618	1	.432	1.461
Acceptance of the management of transaction	.574	.468	1.500	1	.221	1.775
Acceptance of laws and regulation	-.595	.392	2.305	1	.129	.551
Constant	6.270	2.565	5.976	1	.014	528.557

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