

Evaluating Public Housing for Migrants in China: A Case Study of Public Rental Housing in Dongguan.

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1 Introduction

After more than 30 years of housing reform, China successfully expanded the urban housing stock. However, the predominant role of the market in housing provision brought about a housing affordability crisis and social instabilities (Chen and Hao, 2010). Many Chinese cities have faced drastically increasing housing price in recent years. Mean residential housing price rose from 2,799 RMB per square meter in 1999 to 10,777 RMB per square meter in 2016 in 35 major cities¹. However, the income of people, especially low income people, didn't increase at the same rate, which makes housing affordability a problem. A national study of housing affordability in Urban China suggests that “without housing policy interventions the housing market will replicate and, over time, exacerbate income inequities” (Yang and Chen, Page 71, 2014).

What can government do to supply affordable housing for people, especially for the vulnerable groups in housing market. Those who are the most vulnerable group in housing market are migrant workers and they are often associated with affordability problems (Yang and Chen, 2014). Migrant workers are workers who temporarily move without an official change of Hukou (registered residential permit) from the origin to the destination. They always have limited educational levels and work in factories and construction sites with meager incomes. With the rapid economic development and urbanization process in China, more and more migrants move into cities, especially large cities. They helped the construction and development of the city. However, due to the high mobility, meager income and Hukou constraint, they are in a terrible housing conditions. They are unable to afford the high housing price, and have limited access to the affordable housing system.

¹ The data is from China Real Estate Information website (<http://www.realestate.cei.gov.cn/tj/>) and calculated by the author.

These years, China's housing policies have moving towards addressing housing problems of vulnerable groups by promoting public housing construction (Yang and Chen, 2014). Before 1998, housing was considered a basic need of people and it was allocated outside the marketplace. However, this system was not efficient in providing enough housing and impeded economic growth (Chen & Yang, 2014). In 1998, China had a market-oriented housing reform. The provision of housing has shifted from state to market. However, the housing reform has emphasized too much on economic functions of housing investment, and greatly ignored the housing needs of low-income households. The government is aware of the importance of offering affordable housing to people subsequently.

In 2007, the State Council issued a document and concluded that public housing was a necessary tool to meet the basic housing needs of low-income urban households.² Public housing programs are considered a key tool to promote the restructuring of welfare system (Chen and Hao, 2010). The 12th Five Year Plan (WuNianJiHua) period (2011 -2015) noted that “the Chinese government is committed to building 36 million units of public housing during 2011 to 2015.”³ There are three types of social housing in China: Economic Comfortable Housing (ECH)(JingJiShiYongFang), Cheap Rental Housing (CRH)(LianZuFang) and Public Rental Housing (PRH)(GongZuFang). ECH is for home ownership for low-to-medium income households with Hukou who cannot afford market price housing. (Shi and Chen, 2016). CRH is offers rental housing for lowest income people

² Opinions on Solving the Housing Difficulties of Low-income Families in Cities (2007) 国务院关于解决城市低收入家庭住房困难的若干意见, 国发〔2007〕24号

³ the 12th Five-Year Plan(2011-2015) (2011), 中华人民共和国国民经济和社会发展第十二个五年规划纲要 (2011)

with Hukou and is owned and allocated directly by local housing department. Public rental housing refers to the housing units with regulated construction standards and rent levels. It was designed for the families whose income is less than median income, people with new employment but without the ability for homeownership, and migrant workers with a stable employment situation in the city. The public housing units are generally constructed, altered or purchased by city government. PRH is the only public housing type that migrants can apply for. Public housing is planned to host 20 percent urban households by 2015 and public housing provision will be increased mainly through Public Rental Housing.⁴

The Ministry of Housing and Urban-Rural Development has urged local governments to build and finance public rental. Cities have freedom to set their own rules for public rental housing. More and more cities have opened public rental housing to migrants since 2011, including most of the major cities, like Beijing, Shanghai, Guangzhou, Shenzhen, Tianjin, Dongguan, Hangzhou, Shenyang, and Hefei.

Dongguan is a good case of evaluating public rental housing projects for migrants. Dongguan is an important industrial and manufacture city in the Pearl River Delta area in South China. It has more than 8 million resident population and more than 75% of them are migrants.⁵ Most of the migrants in Dongguan work in factories with relatively low income. Private rental housing and the “urban village” is their first housing choice (Li, 2012). But with the redevelopment of urban village, the number of low-rent unit has decreased. Finding other ways, like public rental housing, to offer housing for low-income migrants needs to be considered.

⁴ State Council General Office: guidelines on the construction and management of public housings(2011), 国务院办公厅关于保障性安居工程建设和管理的指导意见(2011)

⁵ Dongguan Statistical Yearbook(2015), 东莞统计年鉴 2015

This thesis evaluates the affordability and accessibility of public rental housing for migrants by taking Dongguan as a case study. It includes six sections. Section one is the introduction, and the background of affordable housing policy in China. Section two offers a literature review of studies about public rental housing and migrant housing in China. Section three provides the methodology of the research, including theoretical framework of affordability and accessibility, methods, and data sources. Section four gives a specific background of public rental housing in Dongguan. Section five analyzes the public housing affordability and accessibility for migrants and explains the findings. Section six gives a conclusion and suggestions on how to offer affordable housing to migrants in the way of public rental housing based on previous results.

2 Literature Review

Housing conditions and affordable housing for migrants have drawn great attention from scholars. Several scholars did research on migrant workers' housing conditions in China and how to supply affordable housing to them. There is also plenty of research on housing affordability and affordable housing policies in China.

2.1 Migrants' Housing Conditions

Wu (2002) conducted research on the access of migrants to the reformed urban housing system, migrants' housing condition and its determination. She used citywide housing surveys and interviews conducted in Shanghai in 1999 and Beijing in 2000, as well as results

from official 1997 Floating Population Surveys and results from the 1995 1% population Surveys of these cities. Wu found that migrants were largely excluded from the mainstream housing distribution system and recent reforms in urban housing provision seem to largely overlook the needs of this population. Renting was a key housing choice for migrants and rental housing has become increasingly popular in both cities in recent years. The restricted access to housing was mainly caused by the existing household registration system and the temporary status for migrants.⁶

Wang, Ping and Wu (2010) explored the way China solved the housing problem of migrants and the urban poor. The research included both a literature study on migrant housing and an empirical study which focused on urban villages in Shenzhen where the majority of the low-income migrants live. The research did qualitative interviews with local officials and documentation analysis supported by a survey of migrant housing conditions. A large number of low-income migrants lived in urban villages in rental accommodation with some basic, but modern, amenities. Locational advantages enabled migrants to live close to work and cut down travel time and costs. Sharing a room or a flat with other migrants is very common. Housing poverty, especially overcrowding, is a serious problem to them. Migrants from urban areas tend to have more space than migrants from rural areas and average floor space varied by gender.⁷

Li (2012) analyzed housing conditions, patterns and mechanisms of Chinese second generation migrants. The research gathered 3168 questionnaires of new migrants by snowball

⁶ Wu, Weiping. "Migrant housing in urban China choices and constraints." *Urban Affairs Review* 38, no. 1 (2002): 90-119.

⁷ Wang, Ya Ping, Yanglin Wang, and Jiansheng Wu. "Housing migrant workers in rapidly urbanizing regions: a study of the Chinese model in Shenzhen." *Housing studies* 25, no. 1 (2010): 83-100.

sampling methods from six Chinese cities: Guangzhou, Dongguan, Shenyang, Chengdu, Hangzhou and Zhengzhou in 2008 and 2009. Li conducted quantitative analysis on the data from questionnaires, including logistic regression and linear regression. Li stated that three types of Chinese new migrants -- labor migrants, intellectual migrants, and investor migrants -- have different housing conditions. Renting was the most common housing pattern for new migrants. After three decades of market reform, housing conditions and patterns of new migrants are still mainly determined by institutional factors such as household registration (Hukou). And housing facility quality is mainly influenced household by registration status, income, educational background, marriage, age and migrant types, among which Hukou was the major determinant for second generation migrants.⁸

2.2 Supply affordable housing to Migrants

Ma and Chen (2008) investigated the housing condition of 850 rural migrant workers by survey in Hangzhou. The survey included questions about personal information, current living conditions, environment nearby, housing affordability and information of former housing in hometown. Then they did quantitative analysis. Ma and Chen also made policy recommendations on establishing and improving the affordable housing system for the rural migrant workers.⁹

Yang and Tan (2011) researched on the main factor that influence migrants' demand for

⁸ Li Zhigang (李志刚). "Housing Conditions, Patterns and Mechanisms of Second Generation Migrants in Urban China: A Case Study of Six Large Cities." ("中国大都市新移民的住房模式与影响机制.") *Acta Geographica Sinica(地理学报)* 67, no. 2 (2012): 189-200.

⁹ Ma, wanly(马万里), and Wei Chen (陈玮). "Investigation and Policy Suggestions of Housing Conditions of Rural Migrant Workers in Hangzhou" ("建立健全面向农民工的城市住房保障体系研究——杭州农民工基本住房状况调查与政策建议."). *Urban Planning 城市规划* 5 (2008): 38-44.

public rental housing. They built a research model of five factors --- income, housing improvement, work and life convenience, obtain process, and residential environment--- based on literature studies. Yang and Tan surveyed migrants about the influence of those factors. The results showed that those five factors were significant. Income constraints are the most significant. They suggested that reasonable rent, scientific layout, and project planning and moderate traffic, education and living facilities are needed for public rental housing for migrants.¹⁰

2.3 Housing Affordability and Accessibility

Yang and Chen (2014) wrote a book about the China's housing policy and affordability. It summarized the background of china's housing system and gave a theoretical background of affordability and its measurement. They also conducted a national housing affordability research by evaluating housing accessibility via savings and mortgage. They suggested that housing affordability might be improved by constructing smaller units and facilitating down-payments. They also conducted a citywide research on Beijing to measure its housing affordability by using Household Survey Data. They found that government housing policy had ease the huge gap between first-time buyer's income and minimum required income for housing. They also found that housing ownership rather than income determined housing affordability for low-to-medium-income group.¹¹

Yang, Yi, Zan and Zhang (2014) analyzed the correlation of affordable housing programs in

¹⁰ Yang, Wenhua (杨文华), and Shuikui Tan(谭术魁). "The Empirical Analysis on Influence Factors of Demand Will of Migrant Workers' Public Renting ("农民工公租房需求意愿影响因素的实证分析.") *Economy and Management (经济与管理)* 11 (2011): 020.

¹¹ Yang, Zan, and Jie Chen. *Housing affordability and housing policy in urban China*. Berlin: Springer, 2014

Beijing with household affordability of adequate housing and accessibility to public services. They stated that housing affordability is not only about housing expenditure but also accessibility to public service. The affordable housing policies failed to make housing affordable and accessible for eligible households. The research used a residual income approach in measuring housing affordability. Affordability of eligible households is worse in 2009 than in 2008 and 2007. One-person households had the most difficulty in housing affordability. The research stated that large portions of the ECH were outside of the central districts and far from the central area. There are significant spatial mismatches between the affordable residences and public services including hospitals, schools and public transportation.¹²

3 Research Design

3.1 Research Questions and Hypotheses

The primary goal of this research is to evaluate the public housing projects' affordability and accessibility for migrants. The research takes Dongguan as a case study because of its high proportion of migrant workers. It allows migrant workers apply for public housing. The hypothesis is that public rental housing is an affordable housing choice for migrants with moderate rents, but the location of public housing is not near the work place which causes more transportation costs. Public service near public housing need to be improved.

¹² Yang, Zan, Chengdong Yi, Wei Zhang, and Chun Zhang. "Affordability of housing and accessibility of public services: evaluation of housing programs in Beijing." *Journal of Housing and the Built Environment* 29, no. 3 (2014): 521-540

This study received approval from Columbia University's Institutional Review Board on doing interviews with planning and housing officers, migrants in public rental housing and urban village in Dongguan. Interview schedules are in Appendices I.

Research has three parts. First, evaluating the accessibility of public housing to migrants by reviewing all the policy documents about public rental housing in Dongguan and interviewing government officers. What is the public housing policy and what are the requirements that migrants need to meet for applying public housing? The hypothesis is migrants with lower income level get better access to public housing. The thesis specifically looks at the criteria the government use to allocate public housing to migrants and identify reasons for that. Besides, the thesis also researches whether migrants get the information of applying public housing or not and how they get that information.

Second, evaluating the affordability of public housing by comparing the rents of public housing with rents of informal housing in urban villages and formal housing in the city and the proportion of rents to the average disposable income of migrants. Can public housing offer migrants long-term and stable living space? The hypothesis is that the rents of public housing are lower than other types of public housing and take up less than 30% of the median income of qualified migrant workers.

Third, evaluating the accessibility of public housing to migrants' work place and public services like schools, buses and subways, and hospitals. The hypothesis is that public housing projects are not close to migrants' work place but with convenient transportation they can easily get to their working place.

3.2 Research Site

The case city is Dongguan, an important industrial and manufacture city in Pearl River Delta area in South China. Dongguan includes migrant workers in its public housing programs and lower the requirement for application these years, in order to accelerate the transfer of public housing and reduce the vacancy rate of public housing. The main research site is Yayuanxincun which is a public rental housing project consisting of 4852 units located in North urban area of Dongguan. Interviews have been conducted with migrant workers living in this project. Huolianshu urban villages is another research site, in order to comparing public rental housing with urban village the most population housing option for migrant workers. Huolianshu is located near the city center and the rents of apartments from 40 to 80 m² are usually between 400 to 1000 yuan per month.

3.3 Methodology

(1) Documentation review

The thesis reviewed government documents of public housing policy and regulation, public housing projects description, and literatures to get an overview understanding of the situation of public housing in Dongguan. And it summarized the public housing policy and the requirements that migrants need to meet for applying public housing.

(2) Interviews

Interviews were conducted with 2 officers from housing department and 2 from planning department to get the preference of government towards offering public housing to migrant workers and their efforts to offering housing to them: What is the government's willingness of offering public housing to migrants? What is their concern about it? When making the

public housing policy, did they considered migrants and how? And also there are semi-structured interviews with 10 migrants lived in Yayunxincun which are randomly selected, about their perception and satisfaction about projects, their understanding about public housing policy in the city and how did they get the information, and their preferred distance of working place to living location. 8 interviews were done about people living in urban village about their housing preference if urban village become unavailable to them and the extension they know about public housing policy in the city and how did they get the information, and their preferred distance of working place to living location.

(3) Field research

I also did field research in Yayuanxincun to observe and experience public housing projects. This part aims to have the direct information about the building quality of the public housing project and their integration with surrounding environment.

(4) Price or expenditure to income ratio analysis

The research used price to income ratio approach to analyze the affordability of public rental housing. There are no data on median income of Dongguan, so this research uses the average yearly disposable income to represent the income and use the yearly rent price of Yayuanxincun to represent the price. This approach address whether people are spending an acceptable portion of income on housing cost or not. It's always considered that the housing is affordable if the ratio is less than 30% (Yang and Chen, 2014).

3.4 Data Collection and Analyses

(1) Accessibility of public housing to migrants

To identify the tenants who meet the requirement of affordable housing, the thesis reviewed

government documents and gathered information for interviews of planning and housing officials and migrants both in public housing and urban villages to find the extent migrants know about public housing policy and how did they get informed.

(2) Affordability of public housing to migrants

To identify the affordability of public housing to migrants, the thesis gathered data of rent of Yayuanxincun project from housing department and average disposable income from Dongguan Statistic Yearbook 2015. Rent is based on the size of the units. The market rents are gathered from renting website, like fangtianxia, lianjia, 58, anjuke, ganji. Information from interviews of housing department officers and documents shows whether the public housing projects offer tenants long-term and stable living place or not.

(3) Quality of public housing for migrants

The quality of public housing is indicated by construction and community facilities qualities and accessibility to public facilities. The data on public facilities, like schools, buses and subways, and hospitals, near by were gathered from Dongguan Geographic Information & Urban Planning Research Center and google maps. The information about construction quality, size, and unit types, of the public rental housing housing were collected by literature study, interview of people living in public rental housing and field research.

4 Overview of Public rental housing in Dongguan

Dongguan was a city with 8.34 million population (permanent residents) in 2014, which included 1.91 million households. The temporary population is 4.15 million. There were 3.89

million laborers from other cities, and 83.3% of them worked on the secondary industry. The per capita yearly disposable income is 38,651 yuan.¹³ Public rental housing refers to the housing units with regulated construction standards and rent levels. It was designed for families whose income is less than median income, people with new employment but without homeownership, and migrant workers with a stable employment situation. The public housing units are generally constructed, altered or purchased by city government. By law, the size of the units should be less than 80 m² and in Dongguan they are usually about 40 - 60 m². Most of the existing public housing units are newly constructed or purchased by city government from the existing housing stock.

Each year the Ministry of Housing and Urban-Rural Development assigns the number of new public rental housing units that each Province should generate. The provincial government then assigns a number to each city within the province. This is the main impetus for local government to build public rental housing. In 2011 Dongguan was required to add 7500 units of affordable housing, 17,000 units in 2012, and 3000 units in 2013. Dongguan focused on increasing public rental housing to meet the goal. With a decreasing the number of new units required each year, Dongguan has switched to redeveloping shantytowns.

The public rental housing in Dongguan has three types: (1) housing units directly controlled by government through construction (type 1-1), purchasing or leasing (type 1-2); (2) dormitories in the development zones and industrial parks which are finance by government, and (3) staff apartments and dormitories constructed by enterprises and institutions.

Dongguan had 39,728 units of total public rental housing in 2016. Table 1. Shows the number of units in each housing type. According to the data collected from Dongguan

¹³ Dongguan Statistical Yearbook 2015, 东莞统计年鉴 2015.

Housing and Urban-Rural Development Bureau, Dongguan has 17,507 public rental housing units financed and owned by the government (Type 1), 8,211 of them haven't been rented to any families. Only 365 units in Type 1 have been purchased by the government. This reduces the financial burden of city government. All Type 2 units are government directly financed construction. Most of the Type 2 housing is located in Songshanhu which is the Science and Technology Industrial Park of the city. The park's management company manages and assigns public housing units for workers who work in the park. Type 3 housing is built by enterprises and institutions as dormitories and comprise 55.9% of public rental housing. This type of housing is not open to all migrant workers, among all 39,728 units of public rental housing in Dongguan, only 13.2% are opened to all migrants.

Table 1. Number of different types of public rental housing units in Dongguan

<i>TYPE</i>	<i>UNITS</i>	<i>PCT</i>
<i>Type 1-1</i>	4,852	12.2
<i>Type 1-2</i>	365	1.0
<i>Type 2</i>	12,290	30.9
<i>Type 3</i>	22,221	55.9
<i>Sum</i>	39,728	100

Data source: Dongguan Housing Department

Figure 1 is a map shows the Distribution of Type 1 & 2 Public Housing Units in Dongguan. And Table 2 offers detail information about the location, number of units and rents of each projects. The size of each projects varied differently, for Type 1 and 3, there are usually thousands of units in a project. And for Type 2, each location only has fewer than 100 units. The rent of units in different project are usually different. According to Dongguan Public

Table 2. Type 1, 2 & 3 Public Housing Units in Dongguan, 2016

Name	District	Collecting Method	Number of units	Rents	Number of Empty Units
Yayuanxincun	Nancheng	New Construction	4852	7 yuan/m ²	554
Dongbugongyeyuan	Guancheng	New Construction	342	10 - 12 yuan/m ²	0
Xinshijixingcheng	Dongcheng	Purchase	19	16 yuan/m ²	12
Xiangshulishe	Nancheng	Purchase	21	22 yuan/m ²	15
Jiashengguangchang	Nancheng	Purchase	16	21 yuan/m ²	0
Oujingcheng	Wanjiang	Purchase	21	15 yuan/m ²	5
Keyuangongyu I	Songshanhu	New Construction	1168	500 - 950 yuan per units	0
Keyuangongyu II	Songshanhu	New Construction	1126	700 - 1280 yuan per units	0
Keyuangongyu III	Songshanhu	New Construction	814	520 - 1200 yuan per units	0
Taikehuayuan	Songshanhu	New Construction	2068	545 - 790 yuan per units	777
Songhuxinfuhuayuan	Songshanhu	New Construction	3386	N/A	3386
Songtaomeiyu	Songshanhu	New Construction	878	N/A	878
Shengtaiyuan	Songshanhu	New Construction	2508	N/A	2508
Xinchengshihuayuan	Changping	Purchase	23	10 yuan /m ²	3
Defenghuayuan	Dalang	Purchase	22	16 yuan/m ²	0
Huishanghuayuan	Fenggang	Purchase	14	12 yuan/m ²	1
Yongyashanzhuang	Huangjiang	Purchase	15	16 yuan/m ²	1
Xiangbingyayuan	Liaobu	Purchase	31	13 yuan/m ²	8

Data Source: Housing Department

As regard the application process for public rental housing Type 1 & 2, the applicant must follow a series of steps. Migrants fill in the application file and prepare required documents and submit them to the town level housing department where they are working. Then, the town housing department reviews the files and gives a receipt. It reviews and investigates the materials within 20 days and publicizes for 15 days. All qualified materials are sent to city-level housing department and it also reviews all the applications within 20 days. After that, the housing department publicizes all qualified applicants for 15 days. If there are no

objections, all the qualified applicants are put in a waiting list for public rental housing. The period of waiting should be no longer than 5 years. The housing department will record the preference of qualified applications. The assignment of housing units is based on a lottery of select orders. After all these processes, the qualified applicants can choose public rental housing units in order.¹⁵ (see Figure 2).

Figure 2. Public Rental Housing Application Process

Apply → Accept & Review (Town Level) (within 20 days) → Publicity (town level) (15 days) → Review (City) (within 20 days) → Publicity (city level) (15 days) → Register → Waiting List (less than five years) → Recording preference (town) → Lottery → Assign¹⁶

5 Introduction of Yayuanxincun Project

Yayuanxincun, a public rental housing project located in North urban area of Dongguan, is the largest affordable housing project in Dongguan. It's a gated community and was financed and managed by the city government directly. The project covers an area of 135,000 square meters, with a total construction area of about 400,000 square meters. It has 4852 units in total. The housing units have three different sizes: 40 m², 60 m² and 80 m². 57.2 % of the units are 60 m² and only 5.5 % of the units are 40 m². (see Table 3.)

In 2007, the State Council issued an affordable housing policy document "Opinions on Solving the Housing Difficulties of Low-income Families in Cities", which required

¹⁵ Dongguan Government Official Website, Dongguan Public Rental Housing Management Policy, 2014: <http://www.dg.gov.cn/007330010/0201/201610/075ba33119854af2ab6a07f5f210a306.shtml>

¹⁶ Dongguan Housing Department Affordable Housing Official Website, Guidance on Applying Public Rental Housing: <http://www.dgjs.gov.cn/publicfiles/business/htmlfiles/dgjsj/s16261/201403/162244.htm>

municipal government to find a practical and effective solution to the housing difficulties of urban low-income families.¹⁷ Under this background, Dongguan started the Yayuanxincun affordable housing project in early 2008 and completed it in 2014.

Table 3. Number of different sizes of units in Yayuanxincun

<i>Unit size (m²)*</i>	<i>40</i>	<i>60</i>	<i>80</i>	<i>Sum</i>
<i>Number of Units</i>	265	2,773	1,814	4,852
<i>PCT</i>	5.5%	57.2%	37.4%	100.0%

*This is the gross leasable area, which includes the average public space in the community.

Data Source: Housing Department

Yayuanxincun, at the beginning, was only opened to people with Hukou, who met the requirement of Cheap Rental Housing (CRH) and Economic Comfortable Housing (ECH) in central city districts. However, the number of applicants were far less than expected. Then, it expanded to people with permanent residential permits within the whole city. But still, few people applied for it and left the project with very high vacancy rate. The housing bureau made the rest into Public Rental Housing which is open to people without permanent residential permits. And in 2016, the housing bureau further decreased the application requirement to solve the high vacancy rates. The public rental housing is opened to people with new employment in Dongguan who have a bachelor's degree or higher and migrant workers who work in the city and have contributed to the social security fund for five years. The rent of PRH for migrant works should not exceed 80% of the average market rent in the same area with same construction quality. Because of the high vacancy rate, the rent in

¹⁷ Opinions on Solving the Housing Difficulties of Low-income Families in Cities (2007) 国务院关于解决城市低收入家庭住房困难的若干意见, 国发〔2007〕24号

Yayuanxincun has been reduced to 7 yuan per square meter for migrant workers. There is no income requirement for migrant workers to apply for public rental housing.

There are three high schools and three primary schools and several kindergartens within 2 kilometers of Yayuanxincun. (See Figure 3.) There is a market and two malls nearby.

Besides, Yayuanxincun is closer to 4 city parks and three hospitals. The public transportation in this area is bus and there are two bus stops and 4 bus lines.

Figure 3. Map of the Distribution of Public Facilities near Yayuanxincun



Base map source: Google Map

6 Analysis

6.1 Accessibility of public housing to migrants

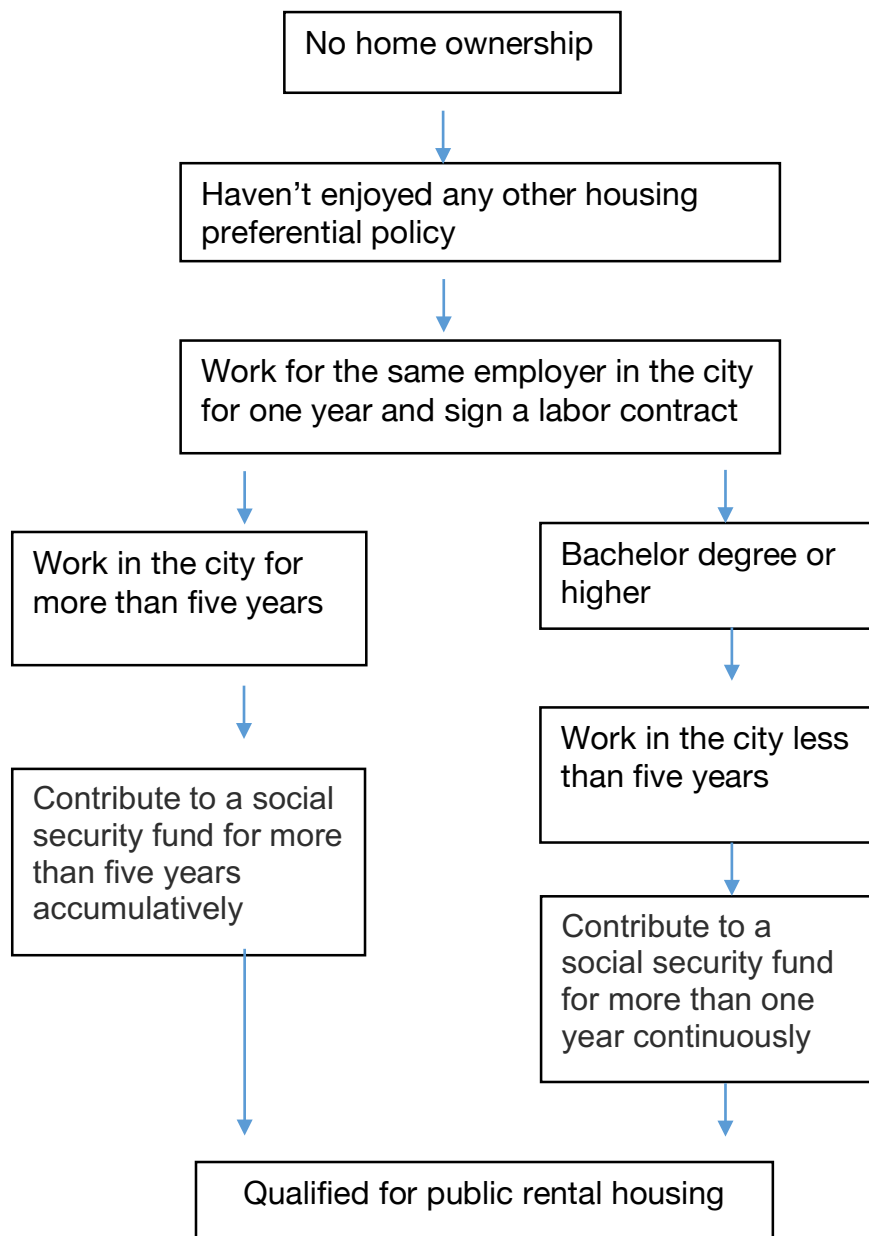
Migrants' accessibility to public housing means whether they can get public housing or not and, if yes, the difficulty of getting a public housing. (See Figure 4.) Two kinds of migrants qualify for public rental (1) migrants with stable employments in the city and (2) new employees with bachelor degree or higher. Both of them should have no homeownership, haven't enjoyed any other housing preferential policies and work for the same employer with a contract for at least one year. For stable employees, they should work for at least five years and accumulatively contribute to social security fund for at least five years. For new employees, they should continuously contribute to social security fund for at least one year and haven't worked for more than five years. If new employees work for more than five years, they are qualified for stable employees that can also apply for public rental housing.

The main constraints for applying for public rental housing are working time and time of contributing to social security fund. Due to the difficulty in checking the income and assets of migrants, there are no income constraints in applying for public rental housing. However, as one officer from housing department said, the goal of public rental housing is to give an affordable settlement for migrants and help them adapt to the city. The year requirements conflict with that goal.

In Dongguan, new employees with bachelor degree or higher have the easiest access to public rental housing. They just need one year working contract with the same employer and one-year contribution to social security fund. For those who are the poorest migrants with unstable work, without a bachelor or higher degree, they need at least contribute to social

security fund for five years, and five-year work time, and one-year work time with a contract. However, it is extremely hard for them to find a stable job with work contract and also with meager salary they always choose not contributing to social security fund. They are excluded from the current public rental housing system.

Figure.4 Requirement of Applying for PRH



Source: Dongguan Housing Department

The interviews with migrants who live in Yayuanxincun shows that a great number of tenants in this project are working in nearby hospital and high-tech enterprises. The main reasons they choose this project are proximate to work place and low rents with decent living environment. They got the application information from their companies. The company gathered all required documents of qualified employees and helped them apply for public rental housing together which largely simplified the applying process for migrants. Some migrants applied by themselves and got the information from newspapers, broadcast, posters, and government websites. They think the application process is long and complex. All of the interviewees commute within 30 minutes to their work place. For people who work nearby, they can walk to work. The hospital is right across the street of Yayuanxincun. For people who work further away, they have cars and drive. Most of the migrants who live in public rental housing actually are middle class or people with relatively higher incomes. They have higher education level and find it easier to get access to housing policies. They can afford private transportation to shorten the commute time. They value the living environment and want to live in gated communities. The rent of public rental housing for them is highly affordable.

Other than the objective requirements set by government, the awareness and understanding of public rental housing also constrains migrant workers' access to public rental housing. The interviews with migrant workers in Hulienshu shows that migrants have little awareness with public rental housing. Most of them just heard of it from news, don't know how to apply and where to apply and migrants can also apply for. Most of them have strong interest in public rental housing. However, after they heard about the requirement and process of the application, those migrant workers said it is hard for them to meet the requirement since they

are just to move the city and the jobs they have didn't have a long-term contract. They also feel the application process is long and complex.

6.2 Affordability of public housing to migrants

After two price reductions, the rent in Yayuanxincun is quite affordable for migrants. The monthly rent in Yayuanxincun is 7 yuan per square meter with 1.1 management fee per square meter. People with Dongguan Hukou only pay 1 yuan per square meter with 1.1 yuan per square meter management fee for public rental housing at Yayuanxincun. However, the monthly average income should be less than two times of the cities' basic cost of living allowance which is 1440 yuan. Household population whose monthly income monthly is less than 3 times of the cities' basic cost of living allowances (2160 yuan) can apply for public rental housing at 3.69 yuan per square meter with 1.1 yuan per square meter management fee. (See Table 4.)

Table 4. Rent of units in Yayuanxincun and Income

<i>Unit Size</i>	<i>PRH Rent</i>			<i>Market Rent (monthly)</i>	<i>Income</i>	
	<i>Migrants</i>	<i>Household population (CRH)</i>	<i>Household population (ECH)</i>		<i>per capita monthly disposable income(DI)</i>	<i>30% of per capital monthly disposable income</i>
40	324	84	192	1000-1200	3,221	966
60	486	126	287	1200 - 1500	3,221	966
80	648	168	383	1600-2200	3,221	966

Data Source: Housing Bureau & Dongguan Statistical Yearbook 2016

Table 5. Rent to Disposable Income Ratio

Unit size (m ²)	One person working family						Two people working family					
	Migrants				People with Hukou		Migrants				People with Hukou	
	DI ^a	30%DIIncome ^b	1440	2160	1440	2160	DI	30%DI	1440	2160	1440	2160
40	10.1% ^c	33.5% ^d	22.5%	15.0%	5.8%	13.3%	5.0%	16.8%	11.3%	7.5%	2.9%	6.7%
60	15.1%	50.3%	33.8%	22.5%	8.8%	19.9%	7.5%	25.1%	16.9%	11.3%	4.4%	10.0%
80	20.1%	67.1%	45.0%	30.0%	11.7%	26.6%	10.1%	33.5%	22.5%	15.0%	5.8%	13.3%

^a: Average Disposable Income

^b: 30 percent of Average Disposable Income

^c: a family whose income is as the same as the average disposable income spends 10.1% of their income in renting a 40-square-meter apartment

^d: a family whose income is as the same as the 30 percent of average disposable income spends 33.5% of their income in renting a 40-square-meter apartment

The monthly rent of one bedroom one living room apartment is 324 yuan. If we consider less than 30% of average yearly disposable income as extremely low income, the rent to disposable income ratio of a one-person working low-income family is 33.5% and for two people working low income family is 16.8%. (See Table 5) And the rent of the largest size apartment to disposable income ratio for one-person working family with average disposable income is 20.1%, and for two people working family is 10.1 which is highly affordable. The rent of Yayuanxincun is almost the same as in an urban village and less than half of the rent in private real estate projects with some facilities and environment. Although migrants pay much more than the household population, the rent is still affordable to them.

In private rental housing market which has looser regulations than public rental housing, migrants can spend less money “renting a bed”. Actually they spend much on housing with the same space than public rental housing. The interviews found that low-income migrants are more sensitive to rental price and convenience of transportation. They only want to move

into public rental housing if the price is almost the same as their current units. The construction quality, living environment, and unit size are factors that they care about in choosing housing, but not as important as rent and location.

6.3 Quality of public housing for migrants

Yayuanxincun is near the belt freeway of South district, which is relatively remote from the city center. (See Figure 5 and 6.) The public transportation is not convenient there with three bus lines and no subway stations. There is usually a 20-minute wait between buses. Besides, it is also hard to get a taxi in that area. Most of the tenants haven't moved in so that there is also low commute demand. Yayuanxincun looks like any other private gated community with safeguards near gates, entertainment and sports facilities. There is one hospital across the street. And it has been equipped with elementary and primary schools.

With relatively the same amount of rents, the living environment in Yayuanxincun is much better than Huoliangshu Village. Yayuanxincun as a gated community has safeguards for the safety of the community and avoid strangers come into the community, while Huoliangshu is an open community with commercial use on the first floor and open to city street.

Yayuanxincun has management companies to manage the trash and facilities, while Huoliangshu doesn't. And Yayuanxincun has entertainment facilities and green space in the community which Huoliangshu doesn't have. The building appearance in Yayuanxincun looks newer and nicer than that in Huoliangshu. However, Huoliangshu is closer to city center and has more bus lines run through it. And as mentioned before, migrants can spend less rent in "renting a bed".

Figure. 5 Photos of the Living Environment in Yayuanxincun



According to the interviews with officers in the planning department, there is no overall plan for affordable housing in Dongguan. The housing department chooses the site and size of affordable housing projects. However, the arrangement of public facilities is by the planning department. These two departments don't work closely together in affordable housing projects. When the housing department decided to build Yayuanxincun, they didn't consider transportation and public facility conditions. Because of the limitation of land, they simply choose the land that the city owned that could support 4,000 affordable housing to meet the requirement of provincial government. Massive construction can lower the construction cost and relieve the financial burden of city.

Graph. 6 Photos of the Living Environment in Huoliانشu



This causes some problems in Yayuanxincun. Some tenants complained about the noise from belt freeways which has massive transportation and many trucks go through.

"Building 21 in right next to the freeway and a lot of trucks like to go through the road.

The noise is too large, and my apartment only ten to twenty meters distance from it.

The noise test up to 100 dB which makes me difficult to sleep at night. I don't know

whether the government take into account the noise problem or not when they working on the project. The living environment or a residential zone should be pleasant and quiet. I think the government should whether install the sound proof doors and windows for the roadside apartments or restrict trucks at night."¹⁸

The construction is also not good. Some apartments have damage. However, as a large housing project, the housing department hired several property management companies to manage it, which makes it difficult for tenants to looking for help. Even when they find the right people, they also worked inefficiently.

*"Yayuanxincun hired a lot of property management companies. Even a little issue needs to make a few calls to confirm which side is responsible for and the maintenance speed is very, very slow. A few months ago I filled a requirement of repairing before move in, the problem hasn't been fixed yet."*¹⁹

*"I contacted the management company for fixed a hole in my apartment, they promised to fixed it. However, it hasn't been solved after two months. Last Saturday I contacted them again. Someone replied that it's none of their business, and it's the government's. He suggested me to sue the government."*²⁰

¹⁸ Interview quotation from interview with Resident 3

¹⁹ Interview quotation from interview with Resident 3

²⁰ Interview quotation from interview with Resident 7

7 Conclusion and Recommendations

7.1 Conclusion

With the requirement from central and provincial government, there are large number of public rental housing in Dongguan, but only small portion of them available to migrants. Dongguan had 39,728 units of total public rental housing in 2016. However, only 13.2% of them are open to all citywide migrants which are the Type 1 & Type 2 PRH. 55.9% are actually dormitories of enterprises and institutions. And 30.9% are only open to workers in specific industrial park. There is now a 12.7% of vacancy rate for all Type 1 & 2 units.

However, there are no clearly defined rules about the qualification of public rental housing by central government. So the city government has the freedom to make their own allocation policies (Shi and Chen, 2016). Local governments are more likely allocate public rental housing as subsidized benefits to attract specific target groups that they prefer, like highly educated people and skilled labor. The local government uses public rental housing not only as a policy for residential safety to low-income population, but as a tool to facilitate industry transformation and upgrade and promote economic development (Chen and Yang, 2014). But mainly because of the high vacancy rates, Dongguan has opened public rental housing to more of the population. It shifted from the household population to migrants, and lowered the requirement for migrants in applying.

The main objective factors constrain the application are working status, years and contribution to social security fund. The subjective constrains are the accessibility to information and difficulty of applying process to them. In Dongguan, new employees with

bachelor degree have the easiest access to public rental housing. For the poorest migrants with unstable work, public rental housing is still far beyond their reach.

The rent of PRH is quite affordable to migrants after 2 rent deductions due to the high vacancy rate. For a low income family that only one family member works and earns just 30% of average disposable income, even they just need to spend 33.5% of income on renting a 40 square meters one bedroom one living room apartment. However, public rental housing is not a long-term housing choice. The current rental term is three years and no total year limits which offers a quite stable time for people to settle down in the city. The housing department might change the policy to set a cap year for migrants stay in public rental housing.

Public rental housing offers good living environment and moderate access to public facilities. And it offers decent housing to the newly emerged middle class (Shi and Chen, 2016). As a gated community, it is very attractive to middle class migrants. The government use the standard as other commercial gated community to design the public rental housing. The facilities in Yayuanxincun are as good as other gated communities nearby. But the accessibility to transportation and management needs to be improved. There are no consideration of public transportation and public facilities before choosing the site of Yayuanxincun project. Land availability is the only factors that matters to housing department. Yayuanxincun is closer to belt freeway which generates unbearable noise to some tenants. The public facilities like kindergartens, primary and high schools, hospitals are within walking distance. As a large governmental project, but hiring several private management companies, there are unclear liabilities and responsibilities.

Migrant workers with higher education and income level care more about the living environment than low-income migrants. They have higher requirement on the facilities and management. For low-income migrants, they are more sensitive to rent and distance to working place. They prefer housing units with smaller average living space but lower rent and closer to work.

7.2 Recommendations

According to the findings gathered from interviews and literature studies and current public housing conditions in Dongguan, this thesis put forward some recommendations for better supplying affordable public rental housing to migrants.

- (1) The housing department should improve the current management of public rental housing. It should be clear who is responsible for what. So the tenants in public housing will know who and where should they ask for help. And the management company will not able to avoid responsibility. Government can build a platform for tenants express their suggestions and complains which should have a good feedback mechanism.
- (2) The housing department need to cooperate with different department in offering better public facilities for public rental housing. With the increasing occupancy rate in existing public rental housing projects, better public transportation should be provided. Moreover, it should have an overall plan for future public rental housing projects. The sites of public rental housing should be selected according to the existing public services system.
- (3) The housing department and the municipal government should expand the publicity of public rental housing. As a new housing type started from 2008, public rental housing is still

new to many people, especially for people with lower education level. The government should adapt multiple ways to broadcast public rental housing, especially for low income migrants who are the most vulnerable group in public housing supply system. Update the available public rental housing units in time. An interactive mapping website of available public rental housing units might be useful for migrants in looking for public rental housing that meet their requirement.

(4) The housing department both in town and city level should offer a clearer and more direct application process. The application process now is complex for migrants. They need to go to different agencies and the directions on the website of the application is vague. The housing department should both simplify the application process and have better explain and education of that to migrants.

(5) More research and surveys need to be done by scholars and city agencies on migrants' need of public rental housing and their qualifications. Due to the data limitation, this research didn't get enough data on migrants' martial status and family size. If this data is available, the housing department should supply different sizes and layout of public housing units for migrants based on their need. Meanwhile, data about the number of qualified migrants is also needed for create the requirement for migrants to apply for public rental housing. It is possible that only a small number of migrants meet the requirement of 5-year-contribution to social security fund and stable employment. If so, the housing department might need to lower the requirement.

(6) Although the current public housing supply system in Dongguan is not accessible to low-income migrants with unstable employment, further actions should be taken for offering affordable housing to them. The government can offer currency subsidies for them to reduce

housing burden. However, further research is needed for deciding who are qualified and how to get the financial sources for that. Besides, due to the housing supply condition in Dongguan that it has a great number of low-rent housing units in urban village which is a main housing sources for migrants, the government can improve the public facilities and living environment of urban village.

(7) Migrants should actively engage with the municipal government and housing department in expressing their needs. There are online survey and city meetings about public rental housing in Dongguan. Migrants should actively express their ideas and needs in those platforms.

Bibliography

- Chen, Jie, Qianjin Hao, and Mark Stephens. "Assessing housing affordability in post-reform China: A case study of Shanghai." *Housing Studies* 25, no. 6 (2010): 877-901.
- Chen, Jie, Zan Yang, and Ya Ping Wang. "The new Chinese model of public housing: A step forward or backward?." *Housing Studies* 29, no. 4 (2014): 534-550.
- Fu, Yuming, K. Tse David, and Nan Zhou. "Housing choice behavior of urban workers in China's transition to a housing market." *Journal of Urban Economics* 47, no. 1 (2000): 61-87
- Li Zhigang (李志刚). "Housing Conditions, Patterns and Mechanisms of Second Generation Migrants in Urban China: A Case Study of Six Large Cities." ("中国大都市新移民的住房模式与影响机制.") *Acta Geographica Sinica(地理学报)* 67, no. 2 (2012): 189-200.
- Ma, wanly(马万里), and Wei Chen (陈玮). "Investigation and Policy Suggestions of Housing Conditions of Rural Migrant Workers in Hangzhou" ("建立健全面向农民工的城市住房保障体系研究——杭州农民工基本住房状况调查与政策建议.") *Urban Planning 城市规划* 5 (2008): 38-44.
- Shi, Wei, Jie Chen, and Hongwei Wang. "Affordable housing policy in China: New developments and new challenges." *Habitat International* 54 (2016): 224-233.
- Song, Yan, Yves Zenou, and Chengri Ding. "Let's not throw the baby out with the bath water: the role of urban villages in housing rural migrants in China." *Urban Studies* 45, no. 2 (2008): 313-330
- Wang, Ya Ping, Yanglin Wang, and Jiansheng Wu. "Housing migrant workers in rapidly urbanizing regions: a study of the Chinese model in Shenzhen." *Housing studies* 25, no. 1 (2010): 83-100.
- Wu, Weiping. "Migrant housing in urban China choices and constraints." *Urban Affairs Review* 38, no. 1 (2002): 90-119.
- Yang, Wenhua (杨文华), and Shuikui Tan(谭术魁). "The Empirical Analysis on Influence Factors of Demand Will of Migrant Workers' Public Renting ("农民工公租房需求意愿影响因素的实证分析.") *Economy and Management (经济与管理)* 11 (2011): 020.
- Yang, Zan, and Jie Chen. *Housing affordability and housing policy in urban China*. Berlin and New York: Springer, 2014.
- Yang, Zan, Chengdong Yi, Wei Zhang, and Chun Zhang. "Affordability of housing and accessibility of public services: evaluation of housing programs in Beijing." *Journal of Housing and the Built Environment* 29, no. 3 (2014): 521-540
- Zhu, Yu. "China's floating population and their settlement intention in the cities: Beyond the Hukou reform." *Habitat International* 31, no. 1 (2007): 65-76

Appendix I – Interview Schedules

This survey is part of a study for a Master thesis on the affordability and accessibility of public housing for migrant workers in Dongguan. The study is being conducted by student from the Urban Planning program at the Graduate School of Architecture, Planning and Preservation (GSAPP) in Columbia University. All information will be kept confidential and no individual responses will be shared. You can refuse to do the interview or refuse to answer any questions. Thank you for your time and patience!

Interview One: Housing Bureau officers

- What are the reasons for opening the application of public housing to migrant workers?
 - Is there any policy restriction from higher level government for open public housing for migrant workers?
 - Is there any upper policy allowance from higher level government for open public housing for migrant workers?
- What are criteria for deciding who are the qualified applicant among all migrant workers?
- Do you make any efforts to inform migrant workers that they are qualified for applying for public rental housing?
 - If yes, what are measures the housing bureaus take?
 - Do you also cooperate with other organizations or institute for that?
- How the housing bureau decide the location of public housing projects?
- What is the plan for offering public housing in next 5 years?
- Will Dongguan make a further step to offer public housing to migrant workers?

- How does the housing bureau decide the rents of public housing?
- What is the rental term of public housing for migrant workers?
- What is the rental term of public housing for local residence with Hukou?
- How to renew a public housing rental term for migrant workers?
- How to renew a public housing rental term for local residence with Hukou?
- What are criteria for deciding number of each unit type in a public housing project?
- What are criteria for deciding size of each unit type in a public housing project?
- How did the housing bureau supervise the construction quality of public housing project?

Interview Two: Urban Planning officers

- Did the Planning bureau work with housing bureau for offering public housing?
 - How did you cooperate with housing bureau?
- In your master plan, it said it will ask developers of redevelopment project set some units as affordable units.
 - Will they serve as public rental housing?
 - Are they any existing redevelopment project already implemented this requirement?
- Is there any mechanism for accessibility to public service for public rental projects?
- Do you have any plan for improving the accessibility to public service for public housing projects?
 - Bus, subway, primary and high school, hospital

Interview Three: Migrant workers live in public housing

1. What are your top concerns for housing? (Rents, close to work, close to public transportation, close to schools, floor plan, construction quality, authentic measure....)
2. How long have you lived in public housing?
3. How do you satisfy with the public rental housing? Score from 1 to 5. (1 = lowest satisfaction, 2 = greatest)
4. How did you get the information about public housing projects?
5. Is the applying process simple and clear to you? Score 1 to 5. 1 = very difficult, 5= very simple.
6. How long do you commute to work? A. 15 min> B.15 – 30 min C.31 – 60 min D. 60 min<
7. Would you willing to pay more for living closer to work? Score 1 to 5. 1 = very dissatisfied, 5= very satisfied.
8. Where did you live before moving in public housing? A. Chengzhongcun (urban village) B. owned-commodity housing C. Municipal public rental housing D. Rental housing E. Working place F. other
9. Do you live closer or farther from work?
10. Why did you move to public rental housing?
11. What do you think are the advantages of public rental housing?
12. What do you think are the disadvantages of public rental housing?
13. Do you plan to live in public housing for next 5 years? A. YES (go to question 12)
B.NO (go to question 13)
14. Why do you want to live in public housing in the next five years?
15. Why don't you want to live in public housing in the next five years?

Interview Four: Migrant workers live in urban village

1. What are your top concerns for housing? (Rents, close to work, close to public transportation, close to schools, floor plan, construction quality, authentic measure....)
2. What is your next housing choice if urban villages become unavailable to you?
A. Chengzhongcun (urban village) B. owned-commodity housing C. Municipal public rental housing D. Rental housing E. Working place F. other
3. Have you ever heard of public rental housing? A. Yes B.No
4. How do you know about public rental housing?
5. How did you get the information about public housing projects?
6. Would you like to apply for public rental housing if you are qualified?
7. How long do you commute to work?
8. Would you willing to pay more for living closer to work?
9. Where did you live before moving in here?
A. Chengzhongcun (urban village) B. owned-commodity housing C. Municipal public rental housing D. Rental housing E. Working place F. other
10. Do you live closer or farther from work?