

Urban Development on the Urban Fringe of the Delhi Metropolitan Region: A Case Study of Manesar, India

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Abstract Since its economic liberalization in 1991, the Indian economy has developed rapidly, particularly in the suburbs of the country's metropolitan areas, which serve as its core. The suburban areas of the Delhi metropolitan region are undergoing development, as evidenced by the construction of industrial parks, office buildings, housing, and commercial malls for the new middle and wealthy classes. This study aimed to clarify the prevailing situation and problems on the urban fringe of Delhi by investigating the actual conditions of housing supply and the characteristics of residents in Manesar, an extension city of Gurugram in the Delhi metropolitan area.

Field surveys were conducted in February 2016 and 2017 regarding the status of development in Sector 1, Manesar. The results revealed that 269 detached houses were constructed from among 536 plots, and 19 small apartments were built. There were 63 paying guest houses (PGs, privately rented houses) in the detached house blocks, and 19 group houses (condominiums or high-rise apartments) of the 55 that had been planned had been completed.

In Manesar, there are many vacant plots and vacant houses because housing owners purchase plots and houses for investment. Many speculators manage rental houses because their prices and rents are cheaper than Gurugram and Manesar is promising in the near future for the plan of Delhi Metro. There are many PGs because there are few restaurants and convenience facilities in Manesar.

Keywords urban fringe, urban development, housing supply, town planning, Manesar, India

I. Introduction

Since economic liberalization began in 1991, India's economy has developed rapidly, and there have been various spatial changes such as the rapid development of large cities, industrial clustering, as in the automotive industry, the strengthening of connectivity between urban and rural areas, and the development of urban networks. In particular, suburban spaces, where the integration of urban and rural areas is proceeding, have expanded rapidly (Mizushima and Yanagizawa, 2015). Dupont et al. (2000) and Dupont (2011) perceived urban development in India as economic development and argued that socio-spatial polarization occurred because of the introduction of foreign capital (a growing middle class and growing slums). As intense urbanization swallows up rural areas, the "center" as the driver of economic growth becomes a mega-region formed of a new economic space in a wider area combining urban and industrial clusters made up of various classes of cities, especially large cities, rather than single large cities (Okahashi and Yui, 2018).

In Southern Asian cities, the dispersion of offices and businesses to suburban areas and satellite cities has been reversed to central urban areas due to improved com-

munication (Bates, 2017). In Delhi, however, urban areas have not been redeveloped, and infrastructure development aimed at attracting foreign capital has been promoted in suburban areas. As a result, foreign companies tend to be oriented toward suburban areas (Hino and Ue, 2015). Consequently, in the suburbs of major metropolitan areas that form the core of the mega-region, multi-functional urban development and industrial park development are underway, combining suburban business parks such as office buildings of financial institutions and software companies. Further, in suburban areas, there is growing momentum behind housing and commercial developments for newly middle-class and wealthy people, who have increased in number as the country's economy has grown. As the young, highly educated, new middle classes move into these regions, there is also an influx of unskilled workers to service them (Bates, 2017), accelerating the concentration of the population in the major metropolitan areas at the core of the mega-region. This rapid urbanization in India appears to be turning large cities into even larger ones (Okahashi and Yui, 2018).

Rapid suburban development in megacity regions has resulted in significant changes in the lifestyles of urban residents as urban landscapes are modernized.

In metropolitan suburban areas such as Gurugram, high-rise office buildings and apartment complexes are formed a modern urban landscape (Okahashi and Yui, 2018). Income-based social and economic stratification is becoming more entrenched in high-rise apartments and single-family homes.

According to Bose (1990), only a portion of the high-income class builds their own homes; because building a house is rare for most people, demand for houses is low. It is very rare for young households to build or search for a house immediately after starting employment. Further, there are various procedural difficulties when constructing houses individually because of financial institutions' inadequate lending systems. However, this mentality has changed in recent years. As an increasing number of homes are being built and sold at a lower cost than they used to be, house purchases are no longer limited to specific classes. As Brosius (2010) pointed out, suburban lifestyles have become a symbol of rising middle-class incomes due to economic growth, as in the case of the overseas residential areas. Demand for better housing has increased with each generation, and consumer behavior has been moving toward housing. Urban inhabitants in India want their residences to be more than simply a place to sleep and have started to think of their residences as durable consumer goods that embody their improvement in living standards.

Yui (1999, 2003) reported on urban development in the Delhi metropolitan area, using the Delhi suburb of Noida as a case study. Meanwhile, Yui (2005) discussed urban development based on private capital in the Delhi suburb of Gurgaon (present-day Gurugram). At the time of the study, Gurugram and Noida were urban fringes of the Greater Delhi Metropolitan Area, but in recent years, Gurugram and Noida have become suburban nuclei, and urban development has further expanded to even more distant suburbs; development in Manesar is making it the new urban fringe.

The purpose of this study was to clarify the actual state of and problems with housing development on the urban fringes of large metropolitan areas using Manesar, where urban development extends out from Gurugram, as a case study. There are no existing examples of geographic studies in Japan or overseas on the expansion of urban development that has turned the Delhi metropolitan area into a megacity. We believe that the process of urbanization in India can be elucidated by clarifying the actual state of housing development on the new urban fringes of the Delhi metropolitan area.

In this study, we collected data from government offices

related to city planning in the case study area; explored land use, construction types, and housing applications through site visits; investigated inhabitant characteristics; and explored the development of apartment complexes.

II. Overview of Manesar

Manesar is located 32 km south of Indira Gandhi International Airport, along National Highway (NH) 8, adjoining Gurugram to the south. Although in administrative terms it is a village managed by a village council, it is, in fact, a census town that resembles a city in terms of population size and socio-economic characteristics (Chen et al., 2020). Manesar had a population of 23,448 people in the 2011 census and is a rapidly developing industrial city. It is sometimes referred to as "New Gurgaon" because of the extensive urban development extending from Gurugram.

Before urbanization, Manesar Village comprised several small villages centered around the Manesar settlement, a typical traditional village. The industrial model township (IMT) of Manesar was developed to encompass the native villages on the northwest side of the Manesar settlement across NH 8. The villages within and adjacent to IMT Manesar have not been cleared for development and remain within the development area as urban villages. Site development was carried out by Haryana State Industrial and Infrastructure Development Corporation Ltd. (HSIIDC), a Haryana state corporation. According to the Manesar master plan, the first stage of development was the largest at 1,746.77 acres (7,068,927 m²), and the second stage was 172.6 acres (698,487.4 m²). The third stage was 597.7 acres (2,418,806 m²), and the fourth stage was 657.52 acres (2,660,889 m²). Development was conducted in 2003–2004.

III. Urban Planning in the Delhi Metropolitan Area

Before presenting the analysis of Manesar, we provide an overview of the development of the Delhi metropolitan area and the characteristics of its urban planning.

1. Development of the Delhi metropolitan area

According to Kaplan (2004), South Asian cities can be divided into three types: bazaar, colonial, and modern showcase cities. Delhi arguably falls into all these categories, given that it was a bazaar city of the Mughal Empire and includes the building of New Delhi during British colonial rule and the urban planning-based construc-

tion of new urban areas following independence. With the major population inflows that immediately followed the separation of India and Pakistan, Delhi continued to grow. The development of suburban areas like modern showcase cities comprising well laid out streets and infrastructure has turned Delhi into a megacity with an urban population of over 10 million people. In the southern parts of Delhi, the Delhi Development Authority (DDA) developed housing on a large scale. Urban development in Delhi is not permitted by the DDA, such as that in the Saket area, has been ongoing since before the Delhi Metro opened in 2004. Further development in the south of the city is underway, as Western foreign-owned enterprises and Japanese-affiliated manufacturing industries and offices expand across the greenbelt and along NH 8 to Gurugram. Housing development in Gurugram by major real estate capital has been ongoing since the 1990s, and the area is becoming increasingly urbanized.

Delhi has several advantages over other large cities: it is a convenient landing point for foreign capital; it has developed infrastructure such as road, water supply, and sew-

age systems suited to its status as capital; it is a place where it is easy to find high-quality labor due to the number of highly educated people and the high quality of workers in the area (Okahashi, 2003).

2. Urban planning in the Delhi metropolitan area

Fast-growing Delhi forms a megacity connected to its vast hinterlands (Jolly, 2010). The development of the Greater Delhi Metropolitan Area is limited to development by the DDA, and the development of suburban areas has had a greater impact than the development of Delhi itself. Delhi is an “employment magnet” at the national level, and the large population inflows after the partition have been followed by significant population inflows from other parts of India into Delhi. The Government of India established DDA as a national project in 1955 to prevent Delhi from becoming oversized and decentralizing its functions. The Delhi Development Law was introduced in 1957, after which the DDA formulated its “Master Plan for Delhi, 1962” (MP-62) in 1962 to restrain urban development in inner Delhi through strict land-use controls.

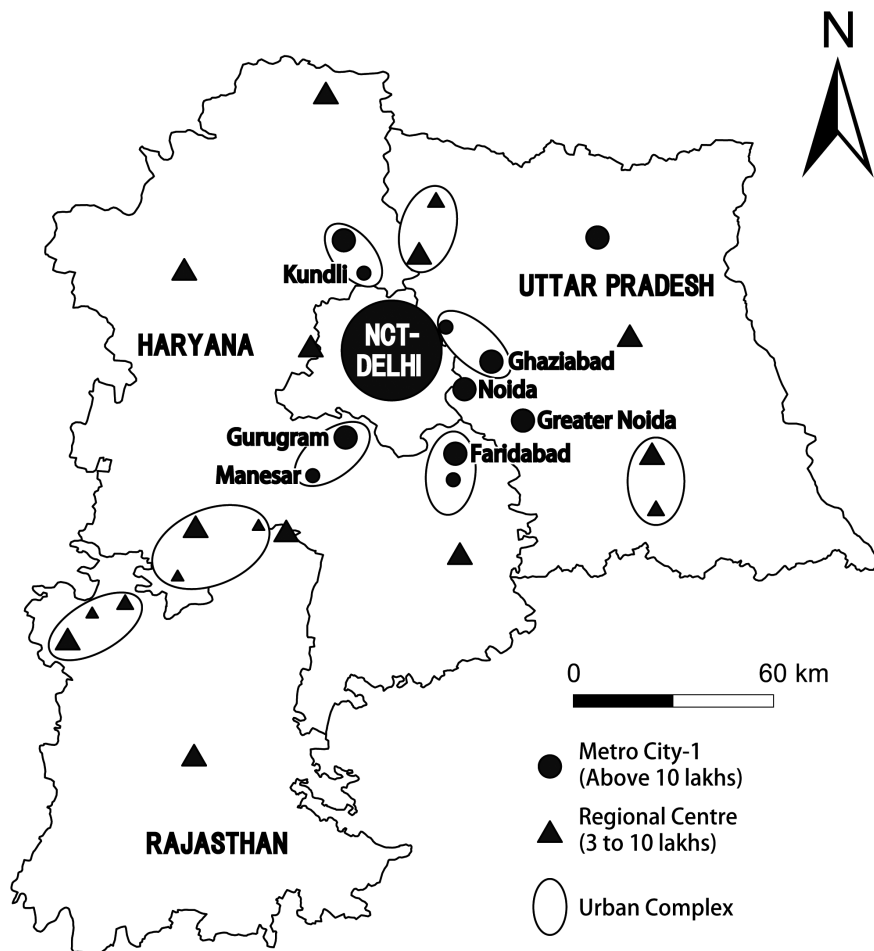


Figure 1. National capital region, proposed settlement pattern 2021
 Source: “Regional Plan-2021 National Capital Region” (National Capital Region Planning Board, 2005, p. 33. map 4.2) modified by Yui.

However, Delhi was unable to cope with the rapid urban growth. In 1985, the National Capital Region Planning Board (NCRPB) was established to harmonize areas around Delhi, including Haryana state, Uttar Pradesh, Rajasthan, and the union territory of Delhi. The NCRPB formulated a regional plan in 1996 and built six cities, including present-day Gurugram, in the areas around Delhi as Delhi Metropolitan Area (DMA) towns, to decentralize Delhi's functions (National Capital Region Planning Board, 1996; Yui, 2005, 2014).

Later, a revised regional plan for 2021 (National Capital Region Planning Board, 2005) was issued to create conurbations between suburban development areas such as Noida and Greater Noida and Gurugram and Manesar and to create links between Delhi and suburban areas to form a multi-tiered inter-urban linkage (Figure 1). These conurbations are similar to the continuous expansion of urban areas found in British urban planning, in the sense that there is no regional centrality in any of the cities but rather, connections between neighboring cities. In terms of functionality, it is more appropriate to see them as expanding towns.

As such, major urban development in India has been focused more on curtailing growth than on redeveloping major cities; it has aimed to decentralize functions away

from the principal city and into the metropolitan area. However, it has not necessarily induced dispersion on a national scale or a wider regional scale; therefore, it has arguably exacerbated the concentration in metropolitan areas (Yui, 2003).

IV. Overview of the Gurugram Manesar Urban Complex Master Plan

Urban development of the region by the Urban Estates Department Haryana (UEDH) began in Gurugram in 1966. Following the establishment of the Haryana Urban Development Authority (HUDA) in 1977, urban development intensified (Yui, 2005) as the population grew from 210,000 in 2001 to 877,000 in 2011. Urban development in Gurugram has progressed more rapidly than in Noida, Uttar Pradesh, on Delhi's east side because the Town and Country Planning Department of Haryana has licensed private developers in the state to undertake development since 1977. Therefore, both HUDA and private developers have undertaken state urban development under the "Haryana method." Two mechanisms are underpinning this method: state government control and lessons from the professional experience of private licensees (Yui, 2018a).

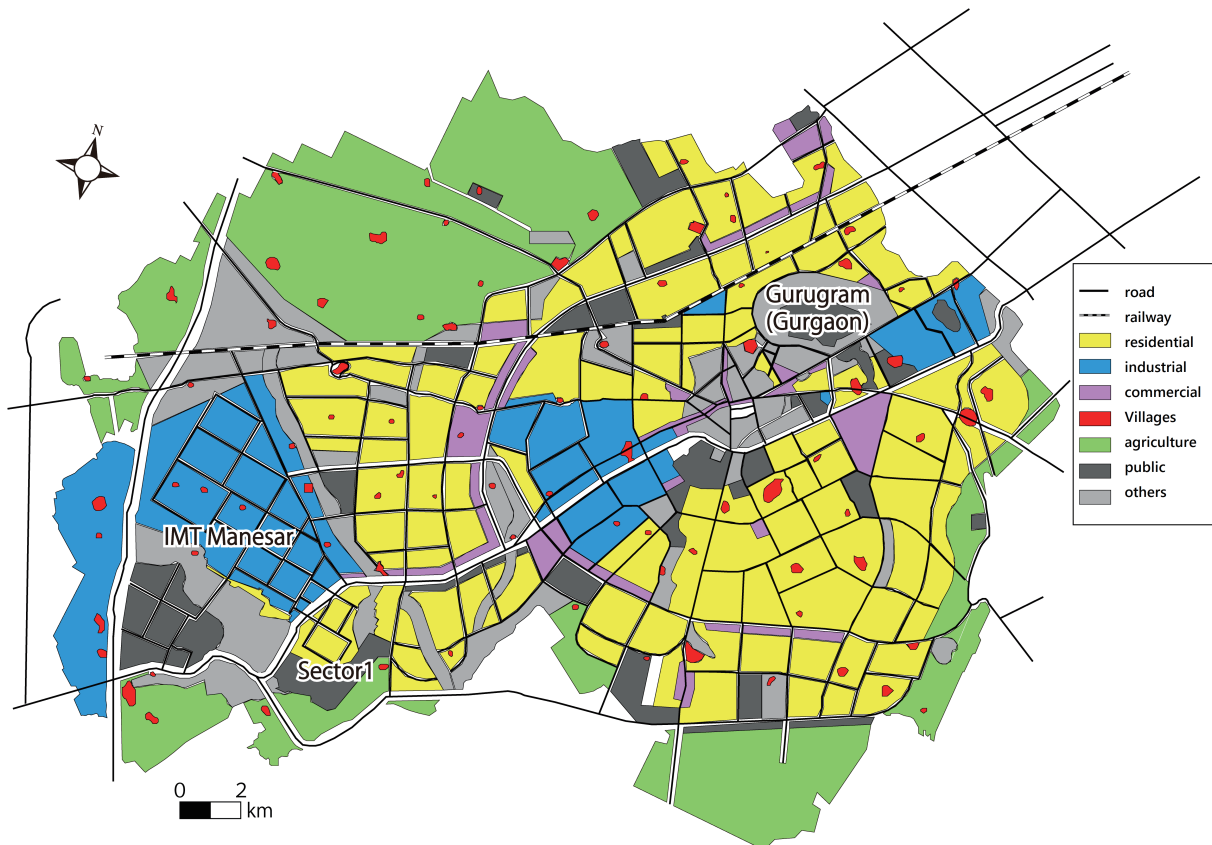


Figure 2. Masterplan for gurugaon – Manesar 2021

Source: "The Gurgaon-Manesar Urban Complex Development Plan for 2021."

In Gurugram, where rapid development has been carried out by private developers, HUDA has undertaken the infrastructure development of road, water supply, and sewage systems, while private developers that have obtained development licenses from the state government for residential and commercial facilities have carried out urban development (Yui, 2005, 2015, 2018b).

As part of Gurugram's master plan (2011), which was released in 1996, HUDA acquired vast swathes of land from farmers, and major real estate investors proceeded with concurrent large-scale urban development in various parts of Gurugram. However, the rapid urban development of southwestern neighboring Manesar pushed HUDA to formulate a new master plan titled the "Gurgaon-Manesar Urban Complex Development Plan for 2021" in 2006 that included Manesar (Figure 2). The area targeted in the master plan was given the name of "Gurgaon-Manesar Urban Complex" and encompassed a planned area of 21,733 ha and a planned population of 3.7 million (Puri, 2007).

As shown in Table 1, Gurugram's "2001 Master Plan" focused on housing development in the city, with residential and industrial land accounting for 63.18% and 13.65%

of the total area respectively. Under the revised "2021 Master Plan", there was a higher proportion of industrial land (15.23%) and open space (17.42%), while residential land accounted for 43.15%, owing, in part, to the inclusion of Manesar in the planned area.

Table 1. Land use plan in masterplan for Gurugram-Manesar

	Land use in 2001		Land use plan for 2021		Land use plan for 2031	
	km ²	%	km ²	%	km ²	%
Residential	62.43	63.18	14,930	47.23	16,021	48.57
Industrial	13.49	13.65	5,441	17.21	4,613	13.98
Commercial	2.20	2.23	1,404	4.44	1,616	4.90
transportation/communication	6.65	6.73	4,231	13.38	4,428	13.42
Public	3.02	3.06	2,194	6.94	2,635	7.99
Millitary	6.33	6.41	633	2.00	633	1.92
Open space	3.63	3.67	2,675	8.46	2,928	8.88
Special zone	1.06	1.07	106	0.34	114	0.35
Total	98.81	100.00	31,614	100.00	32,988	100.00

Source: HUDA "The Gurgaon Master Plan for 2021" and HUDA "The Gurgaon-Manesar Urban Complex Development Plan for 2021."

Table 2. Land use plan for IMT MANESAR PHASE-1

Industrial zone (Sector 2-7)	acre	Residential zone (Sector 1)	acre
Plannning area	3.51	Plannning area	6.77
Industrial	843.26	Residential	
Commercial		detached houses plots	56.52
commercial tower	17.75	group housing plots	60.00
daily necessities commercial land	3.56	service apartment plots	3.97
track parking and commercial space	22.61	Commercial	
gas station and commercial land	2.48	commercial	5.16
Business		shopping center	9.94
office	17.94	Education	
hotels	5.62	middle school	5.12
clinic/pharmacy	2.87	elementary schools/kindergardens	4.41
hospital	5.00	kindergardens/welfare facilities of children	0.52
Public		Public	
welfare center	29.37	electric substation	10.65
branch of administration	13.90	club/community center	4.47
telecom	1.95	water supply site	3.26
water supply site	23.40	road and public land	87.06
road, open space	386.07	Others	
park	16.06	religeous facilities	0.35
Police	42.44	solid waste treatment plant	1.00
electric substation	8.22		
road and public land	5.67		
public building site	2.55		
Others			
golf course	36.06		
total	1,490.29	total	259.20

Source: HSIIDC (Haryana State Industrial & Infrastructure Development Corporation Ltd).
<https://hsiidc.org.in/node/99>

As shown in Figure 2, most of the planned area in the region was for industrial use, and the only newly developed residential area was Sector 1, which is on the east side of NH 8.¹ The industrial area on the west side of NH 8 is seeing the expansion of automotive plants such as those of Maruti Suzuki Corporation, Honda Motorcycle, and Scooter India Co., Ltd. as well as related Japanese-affiliated suppliers and factories such as DENSO (Tomozawa, 2016). The Maruti Suzuki plant covers an area of 2,437,756.82 m², the largest in the developed area.

As shown in Table 2, in the first phase of the land use plan, 843.26 acres (56.58% of the total development area) were allocated as industrial land, and 386.07 acres (25.90% of the total development area) were allocated as roads and open spaces across Sectors 2 to 7 (totaling 1,490.29 acres). The total area of Sector 1 extends to 259.2 acres (1,048,945 m²), with 56.52 acres for detached housing (21.8% of Sec-

tor 1) and 60.00 acres for group housing (23.1%). Across eight acres (32,374.85 m²) of the northwestern section of Sector 1 is placed an HSIIDC apartment complex, while 55 plots have been allocated to group housing at the eastern and southern ends. Moreover, 536 plots were designated as single-family homes.

Four types of detached houses were provided: 40 plots of 20 m×45 m homes, 288 plots of 15 m×30 m homes, 146 plots of 12.5 m×25 m homes across 60.00 acres, and 70 plots of 10 m×25 m homes. As is characteristic of housing supply in India, the size of the housing plots has been diversified to make the residential composition of the area socioeconomically diverse, although housing developments in Manesar offer fewer large housing plots for wealthier households than in Gurugram, and about 80% of the plots are medium or small.



Figure 3. Land use in Sector 1, Manesar
 Source: fieldwork in Feb. 2016 by Yui, Hino and Sharma.



Figure 4. Group housing in Sector 1, Manesar
Source: Yui, 2016Feb.



Figure 5. Vacant house in Sector 1, Manesar
Source: Yui, 2016Feb.

V. Actual Development in Sector 1

We carried out a field investigation to examine the development that took place in Sector 1 from February 2016 to February 2017 and determine how the detached houses and apartment buildings were used. As shown in Figure 3, 269 plots were occupied by single-family homes on the 536 housing plots designated for detached houses, but there were also 19 small-scale apartment buildings, each providing rental accommodation to 2–6 households and 63 paying guest² houses. In terms of the group housing plots, construction on 19 of the 55 plots (including two apartment building plots built by HSIIDC (Figure 4) had been completed and were occupied.

1. State of construction in the detached residential zone

Among the detached housing plots, there were 60 vacant plots, 102 vacant detached houses (Figure 5), and nine vacant small-scale apartment buildings. There were many vacant plots on the smaller strip of land on the west side near the entrance to NH 8 and the wide strip of land on the north and east sides but only a few vacant plots in the center. According to the residents, the reason for the many vacant plots was that the construction deadline for land purchases is longer in Manesar than in Gurugram and the fines were cheap; therefore, many of those who purchased land for speculative purposes left it unattended as vacant land or due to construction interruptions. Of the 102 vacant houses, 90 were detached houses, while the remaining vacant houses appeared to have been constructed as small-scale apartment buildings.

Vacant houses were distributed in all blocks, but some blocks had a higher number of vacant houses. While there

were relatively few vacant houses on smaller plots, there were significant numbers of vacant houses on medium-sized plots in the central, eastern, and northern zones as well as on large plots in the southern zone. This suggests that many of those who purchased land on smaller plots did so for residential purposes, while more purchasers of medium-sized and large plots did so for speculative reasons. Many of the plots bought by speculators were left in an uninhabitable state with only the roofs and walls having been formally constructed to meet the construction limit set as a condition for purchasing the land, with no windows or interior construction carried out. According to interviews with real estate agents in the district about a large number of vacant plots and houses, many of the landowners of vacant plots were from Delhi, Gurugram, and the Haryana capital of Chandigarh and purchased the land for speculative purposes with no intention of inhabiting it. This speculative behavior is likely because the land is next to Gurugram, where there are many wealthy people and to which the Delhi Metro line is expected to extend in the future, which shows the true state of urban development on the urban fringe.

2. State of group housing development

In India, middle- and high-rise apartment blocks are known as “group housing.” Delhi’s suburban space has been undergoing drastic changes because of rapid urbanization. Middle- and high-rise apartment blocks have suddenly appeared in rural areas, followed by the in-migration of urban inhabitants with modern, Western lifestyles who prefer gated communities surrounded by high walls and reinforced gates with several guard man. In Gurugram, development has been carried out by DLF, the leading real estate developer, and other major real estate

developers, such as Unitech and Ansal, which acquired development licenses to build group housing, retail facilities, and offices (Yui, 2005). In India, much of the public capital-based development has tended to progress slowly owing to a lack of funds; however, the Haryana-style urban development in Gurugram was meant to attract rapid urban development by utilizing the abundant funds of massive real estate capital.

Contrastingly, although both Manesar and Gurugram are part of Haryana, and infrastructure development in both areas has been undertaken by public institutions,

the construction of group housing in Manesar differs from its counterpart in Gurugram. As shown in Table 3, in Manesar, except for the HSIIDC (the state government agency) housing complexes, the majority of group housing is cooperative housing where prospective inhabitants establish housing associations known as societies and become proprietors. As such, they play a part in everything from land acquisition and design to project management, with leading real estate developers playing no part at all.

When cooperative housing is being built, it is typical

Table 3. Outline of group housing in Sector 1, Manesar

Group Housing Name	Development entity	year of construction	total units	Layout and number of unit	sales price (lakh Rs.)	rate of rents (%)	remarks
SIDCO SHIVALIK APTS	SIDCO	2008~2009	494	2BHK~4BHK	4BHK: 75 lakh, 3BHK: 65 lakh, 2BHK: 55 lakh	80	
SIDCO SHIVALIK APTS	SIDCO	2008~2009	No Data	No Data	No Data	No Data	
The NHK C.G.H.S.LTD	Association	2010	52	2BHK	70~100 lakh	No Data	
AASTHA Apartment	Association	2012	20	3+1BHK	110 lakh	80	
IMT VIEW C.G.H.S.LTD	Association	2010	No Data	No Data	100 lakh	20	
THE CREW BOS CGHS Ltd.	Association	2010	71	4BHK: 28 units, 3BHK: 28 units, 2BHK: 15 units	4BHK: 125 lakh, 3BHK: 100 lakh, 2BHK: 75 lakh	70	Many commuters to Manesar
DENSO APARTMENT	Association	2014	84	2BHK~4BHK	4BHK: 80 lakh, 3BHK: 70 lakh, 2BHK: 60 lakh	80	Joint project with 9 associations
THE SRIKAMAL CO-OPERATIVE Group Housing Society Ltd.	Association	No Data	40	No Data	No Data	No Data	
The Deepak Co-op GHS Ltd.	Association	No Data	40	3+1BHK	No Data	No Data	
Project Residential Building Prasha CGHS Ltd.	Association	No Data	No Data	No Data	No Data	No Data	
Green Campus CGHS Ltd.	Association	2010	24	3BHK	35 lakh	43	
The NAV Manesar CGHS Ltd.	Association	2010	24	3BHK	No Data	100	
NAGATHA Group Housing	Association	2015	22	3BHK	All owner occupied: 70 lakh	0	Many commuters to Gurugaon
The Rock CGHS Ltd.	Association	2012	25	3BHK: 20 units, 4BHK: 5 units	3BHK: 110 lakh, 4BHK: 125 lakh	90	
APPL (Aelekh Polymers Pvt Ltd.) GHS	Association	2013	28	3BHK	3BHK: 70 lakh	25	
The Imperial Apartments, Star property	Association	2011	25	3+1BHK	70~100 lakh	25	
Professional CGHS	Association	2010~2016	21	3BHK	70~100 lakh	No Data	Living owner
The Shree Siddhi CGHS Ltd.	Association	2008~2009	40	3BHK	60~65 lakh	100	
Mangal Murti CGHS Ltd.	Association	2006	24	3BHK	100 lakh	100	
SBR Apartment HGS	Association	2011	40	3BHK, 4BHK	3BHK: 75 lakh, 4BHK: 100 lakh	90	Living 4 owners rent out.
Ramdeep Group Housing	Association	under-construction	52	3BHK	No Data		starting in 2015
The Himalayan CGHS Ltd.	Association	under-construction	No Data	No Data	No Data		
No Data	No Data	under-construction	No Data	4+1BHK: 3+1BHK	4+1BHK: 100 lakh, 3+1BHK: 80 lakh		starting 2011
The Kailash CGHS Ltd.	Association	stopping construction	25	3+1BHK: 25units	No Data		

Source: fieldworks in 2016Feb.

for prospective residents to form an association and start construction. The case in Manesar, however, is that people have established housing associations and become proprietors purely to acquire land for speculative, rather than residential, purposes. However, there are many buildings where investment by speculators is delayed for some reason, and the construction of the building has been paused owing to a lack of funds (sometimes even in the middle of construction). Additionally, because many of the cooperative housing areas in Sector 1 were bought by relatively wealthy people, most of the group housing is for rent, rather than for purchase; many buildings rent 80–100% of residences. In some group housing, certain residents have formed clubs to build group housing to rent them out while living there themselves.

Of the 55 plots given over to group housing, there were many apartment buildings under construction on plots in the eastern and northwestern sections, in addition to those that had already been completed in these areas. However, on plots on the southern blocks, there were 17 apartment buildings where construction had stopped, and there were also vacant plots. Further, it did not appear that construction was due to recommence soon on the apartment buildings where construction had paused; rather, it appeared as if they had been left in that state for a long time.

In terms of the group housing units that had been built, common room layouts ranged from 2BHKs (B for bedroom; H for hall, the Japanese equivalent of a living room; and K to kitchen) to 4BHKs, with the majority being 3BHKs. Although slight differences were depending on the apartment complex, 3BHKs had approximate square footage of 1,800 (around 167 m²), making them considerably larger than units in a typical Japanese apartment complex. Sale prices ranged from 6–11 million rupees³ for a 3BHK apartment to 7–12.5 million rupees for a 4BHK apartment. Rental prices were around 13,000 rupees, 14,000–20,000 rupees, and 18,000–35,000 rupees for a 2BHK, 3BHK, and 4BHK respectively; rental costs varied significantly depending on the property.

Most of the group housing was built between 2010 and 2014. Looking at sale prices differentiated by year of construction, the price bands of 2–4BHK ranged between high and low until 2014, but after 2015, there were no more high prices. In recent years, the number of high-value properties has fallen in Gurugram, and there has been a tendency to reduce the living space and lessen the for-purchase prices of the units, although both the for-purchase and for-rent prices of group housing units are significantly lower in Manesar than in Gurugram.

This indicates that housing supply on the urban fringe of Manesar targets the new middle class, rather than the wealthy, as in Gurugram.

3. PG (Paying Guest)

The plentiful number of PGs is a noteworthy feature of housing in Manesar. Within the blocks of detached houses in Sector 1, there were 63 PG buildings, rental units that come with provided meals and target single people, rather than rental units for families. They were relatively concentrated in the southwestern and central blocks, all on small plots. There are two types of PG: the first is where family accommodation has been converted, and each room within the unit has been rented out, while the second is where the unit has been purposefully built for PG rental, with the configuration of many small-sized rooms. Given the difficulties in judging the type of building from its exterior, in this study, we considered a PG to be a building that had “PG” inscribed above the entrance.

The results of the field surveys of all PGs in Sector 1 using door-to-door visits are summarized in Table 4. In PG accommodation of the first type, where family units had been converted, each room contained beds for 4–6 people with accompanying lockers. In some PG accommodations, there were also beds in the entrance lobby, creating a somewhat crowded living situation (Figure 6). The second type of PG accommodation had a single entrance, and inside, there were individual rooms arranged like apartments, with a communal lobby and a canteen. The number of rooms in a PG unit varied from five to 21, but most had approximately 10 rooms. The number of occupants ranged from seven to 52; therefore, each room would have 2–4 residents.

Most of the owners of PG buildings were Manesar residents, and most tenants were regular IMT Manesar workers. It is difficult for non-regular contract workers (Tomozawa, 2016) with monthly incomes of less than 10,000 rupees to obtain a space in a PG house because the total monthly rent and meal expenses in Sector 1 were 6,000–16,000 rupees for a single room or 4,500–8,000 rupees for a berth in a 2–6-person room.⁴

A noteworthy feature of the urban fringe was a large number of PG houses in Sector 1. This was because there was a high demand for accommodation with meals included due to the small number of restaurants in the industrial parks and residential district. Another factor was that land buyers who did not want to live on their property built accommodation for rent as a means of avoiding fines and then rented out single rooms to multiple residents.

Table 4. Outline of guesthouses in Sector 1, Manesar

PG List	Owner	residence of owners	number of residents	resident attributes	number of rooms	rent (Rs.)	persons/room	remarks
1	private	Manesar	23	workers	No Data	8,000/shared room, 6,000/single room	No Data	
2	private	Manesar	4	workers	No Data	5,000	No Data	originally detached house
3	private	Manesar	15	workers	No Data	6,000	No Data	originally detached house
4	private	Manesar	12	workers	No Data	7,000	1 person	
5	private	Manesar	52	workers	16	8,000/double room, 6,500/triple room, 5,000/quadruple room	2-4 person	
6	company	Manesar	over 30	workers	No Data	No Data	4 persons	
7	private	Manesar	16	workers	No Data	No Data	over 4 persons	both PG and Guesthouse
8	No Data	Manesar	10	workers	No Data	5,000	3-4 persons	
9	private	No Data	50	workers & students	21	5,000/6,000/7,000	No Data	two elderly Japanese rent
10	private	No Data	35	workers	15	5,000-6,000	2-3 persons	both PG and Guesthouse
11	private	Manesar	32	workers & students	14	5,000	No Data	living with Owner's family
12	private	Manesar	24-29	workers	12	5,000-6,000	2-3 persons	
13	private	Manesar	15-20	workers	5-7	4,500	2-4 persons	
14	private	Manesar	35	workers & students	16	6,500	4 persons	
15	private	Manesar	12	workers	No Data	5,500	No Data	
16	private	Manesar	15	workers	8	5,500	3-6 persons	company house
17	private	Manesar	50	workers & students	17	5,500-6,000	No Data	
18	private	Manesar	7	students	4	5,000	No Data	both PG and Guesthouse
19	private	Gurgaon	18	workers	6	4,500-5,000	3-4 persons	
20	private	Manesar	No Data	No Data	No Data	No Data	No Data	both PG and Guesthouse
21	company	Manesar	22	workers	20	5,500/single room/6,500/double room	No Data	
22	private	Manesar	No Data	workers	8	5,000	3-4 persons	non AC
23	private	No Data	No Data	workers	18	6,000	3-4 persons	
24	private	PK Bansal	18-20	workers	10	12,000/single room 5,000/2-3 shared room	1-3 persons	
25	private	Manesar	13	workers	18	5,500	3 persons	owner is farmer
26	private	Manesar	18	workers	5	5,000	3-4 persons	originally flats
27	No Data	No Data	15	workers	11	5,500	3 persons	
28	private	Manesar	30	workers & students	15	5,500/triple room, AC room/6,500	3 persons	
29	private	Manesar	30	workers	12	5,000/3 bed	3 persons	
30	private	Manesar	35-40	workers	9	8,000/double room 5,000/4-5 shared room	2-5 persons	
31	private	No Data	9	workers	10	6,000	1 person	
32	private	Manesar	17	workers	6	5,000	3 persons	originally flats
33	company	UP State	45	workers	12	4,000	3-4 persons	company house
34	No Data	Manesar	40	workers	17	5,000	2 or more persons	
35	private	Manesar	38	workers	16	5,000	3 persons	

Source: fieldworks in 2016Feb.



Figure 6. The room of PG in Sector 1, Manesar
Source: Yui, 2016Feb.

VI. Characteristics of Sector 1 Tenants

In February 2015, we conducted an interview survey on Sector 1 residential households to determine the type of residents who had migrated due to housing development on the urban fringe. We visited 269 detached houses and three group housing complexes in Sector 1; however, because it was an urban area, many residents refused to cooperate with the investigation. Because all group housing complexes are gated communities and entry restrictions are imposed by gatekeepers, on-site surveys are extremely difficult. Therefore, it should be noted that the findings are more reflective of the characteristics of specific residential households.

We interviewed 76 households living in single-family houses and 74 households living in group housing complexes. As for detached houses, owner-occupied houses accounted for about 40%, and rental houses accounted for about 40%, showing that there were many rental housing tenants.

With respect to age groups, as shown in Table 5, residents of detached houses were in their 20s to 50s, but this range also included young PG residents living in detached houses that had been converted. Meanwhile, over 50% of the group housing residents, with many young households, were in their 30s. In terms of the previous residences of the householders, 35.5% of those in single-family houses came from within the Haryana state, with the same being true for 25.7% in the group housing units. Moreover, 17.1% of the householders in detached houses and 16.2% of the householders in group housing came from Uttar Pradesh. Because slightly fewer than 7% of householders migrated from Delhi, few households seem to have moved from major city centers to the suburbs in

Table 5. Age of householders by housing types

Age of Householders (years)	Detached houses		Group housing		total	
	Count	Percentage	Count	Percentage	Count	Percentage
-29	14	18.4	16	21.6	30	20.0
30-34	13	17.1	25	33.8	38	25.3
35-39	11	14.5	15	20.3	26	17.3
40-44	7	9.2	7	9.5	14	9.3
45-49	12	15.8	3	4.1	15	10.0
50-54	8	10.5	3	4.1	11	7.3
55-59	4	5.3	1	1.4	5	3.3
60-	7	9.2	3	4.1	10	6.7
No Answer			1	1.4	1	0.7
総計	76	100.0(%)	74	100.0(%)	150	100.0(%)

Source: field survey in February 2015.

Manesar.

In terms of the workplaces of residents, approximately 70% of householders of both detached houses and group housing units worked in Manesar, demonstrating that commuters to IMT Manesar sought housing in the neighboring Sector 1. Approximately 20% of the group housing heads of households commuted to the nearby Gurugram. It could be argued that Manesar has a weak relationship with the central metropolitan area of Delhi and has assumed a position as a “suburb of the suburb,” given the high number of commuters to Gurugram and within Manesar itself.

VII. Conclusion

In this study, we clarified the state of housing development in Manesar, an urban development area on the urban fringe of the Delhi metropolitan area. Although both Manesar and Gurugram are part of Haryana state, unlike Gurugram, housing development in Manesar has not been carried out by major private real estate developers; instead, apartment complexes and land plot sales have been led by the state government agency HSIIDC as the main business entity. In Manesar, the conditions for acquiring housing did not require purchasers to construct dwellings in short order; therefore, there have been many speculative purchases by absentee buyers from Delhi, Chandigarh, and elsewhere, meaning that there are now many vacant plots and units in the area. Additional to the purchase of land and housing for residential purposes, many houses have been rented out.

Since Manesar is over 30 km from Delhi, it is an inconvenient commute, and not many people do so. Many people commute to nearby IMT Manesar and Gurugram, which is only a short distance away. The middle classes are

increasingly moving out to the urban fringe on the edge of the suburbs owing to the soaring land and housing prices in Gurugram.

Expanding radially from the core metropolitan area of Delhi, the suburban regions along the highways and railways have formed a metropolitan area that is integrated with Delhi. It is in these places that residential developments for the wealthy and middle classes, sprawling shopping centers, and foreign-affiliated factories are being built. According to McGee and Robinson (1995), megacities are more a spatially expanded urbanization than they are a concentration of the population, and a similar concept is described by Ginsburg et al. (1991) as an extended metropolitan region and by Chakraborty (1991) as an extended metropolitan area; this concept applies to the development of the Delhi metropolitan area, where the urban fringes continue to expand outward.

Further extensive expansion from suburban cores, such as from Gurugram into Manesar, Noida into Greater Noida, and Faridabad into Greater Faridabad, has resulted in the expansion of much larger urbanized areas than decentralized urbanization in the form of suburbanization of capital activity, arguably in the form of megacities.

However, the belt-shaped development along the highways has destroyed a large amount of roadside agricultural land, and despite the original planned urban development, development has become a fragmented, incoherent mix of private housing estates, commercial land, and industrial land. Additionally, a stratified housing market has emerged in response to the strong housing demand, and soaring land prices have led to development becoming a target for speculation by the wealthy. Although, at first glance, it appears as if the social classes are mixing, the reality is that there is a widening social class disparity based on housing type. Furthermore, one of the problems associated with urban development in Indian metropolitan areas is that land has been seized from rural areas (Jain, 2014). As over-urbanization in third world, urban development in India has led to the chaotic urbanization of traditional rural areas within the planned site.

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Notes

1. With respect to small-scale residential land outside of Sector 1, a total of 36 dormitories for industrial workers and 192 single-person housing units were planned for Sector 8, which contains an industrial area.
2. Paying Guest Houses (PGs) are private rental houses with catering and cleaning services.
3. The exchange rate as of 2016 was Rs 1=¥1.62.
4. It is common for low-salaried contractors to form clubs to rent accommodation within the low-cost IMT industrial park or in neighboring urban villages.

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