

**A STUDY ON THE APARTMENT RESIDENTS'  
NEIGHBORHOOD AND HOUSING SATISFACTION FOR  
THE COMMUNITY LIVABILITY  
: CASE OF MODEL SITE, BUNDANG**

**Yoo-Mi Lee**

*Senior research specialist, Housing Research Institute of  
Korea National Housing Corporation, Korea*

**Mee-Youn Jin**

*Rresearch specialist, Housing Research Institute of  
Korea National Housing Corporation, Korea*

**Hye-Ran Kim**

*Visiting researcher, Housing Research Institute of  
Korea National Housing Corporation, Korea*

## **Introduction**

### **Research backgrounds**

Recently many attempts are considered that can improve the living arrangement, neighbor ship, and make quality of life in residential environment. For example, the catchphrase of housing sector in the 4<sup>th</sup> Land Development Planning has been determined as 'Make our community better' to acquire the amenity of living space rather than 'Home Ownership' to solve the shortage of housing supply, which was the basic goal of housing policy so

far. As well as top-down approach like this, bottom-up approach that residents try to make suitable environment for them is gradually getting active. 'Form the community', 'Beautiful community', 'Green apartment house', 'Life cooperation community movement' etc. are the instances of this sort of movements.

Apartment houses are now the representative form in our housing culture. Until 70's, 80's and early 90's, they are the important mass products for those who do not have their own houses. It was the government who led the housing policy, made and maintained the living spaces and this was also the suppliers' responsibility. A house is considered as a mean to increase the property rather than living space as shelter. As a result, high movement rate caused residential instability. Suppliers led the market, which set aside the residents' requirements and preferences. 'Construction' oriented policy resulted the absence of neighborhood, ignorance of the space outside my house, and NIMBY syndrome.

Community development is defined as a kind of group movement that many acting bodies share the tight cooperation in harmony and balance with their environment in order to improve the quality of the community residents' lives (Ki-seok Kye, Hong-soo Byun, 1998; Se-hoon Jang, 2000). There have been active discussions on the alternatives of community development and this is not only for the physical improvement of housing environment quality but for the residents' benefit, which can be accomplished through the formation of residents' solid neighborhood.

In this study, we are going to identify the apartment house residents' neighborhood and how this influences the housing satisfaction which is the real quality of the housing. Also we are going to cover what the apartment house residents are the range of their neighborhood, how much they want to associate with them, and the way whether they are satisfied with their housing environment influences the neighborhood such as physical housing characteristics and each resident's social-economic characteristics. We hope that this study propose the basic approaches to design various and unique housing complexes, to prevent early obsolescence, to focus on maintaining, and to develop the residents-involved community.

## Objectives

The objectives of this study are to identify the apartment house residents' neighborhood and its influence on the housing satisfaction. The details are like the followings:

- i) Identify the neighborhood based on the resident characteristics and physical housing characteristics.
- ii) Identify the relationship of household, housing complex, and neighborhood.

Here, the resident characteristics include family life cycle, length of occupancy, and the housing tenure. The physical characteristics include housing size, and corridor type. In case of income variable which is one of the economic characteristics, the rate of no answer is high, reporting is not so accurate, and other income except main is not reported so it is not included here. Instead size of the house is used as a proxy

Detail items of the neighborhood include the variables such as number of neighbors based on the degree they are neighboring, social interactions, and homogeneity. Neighborhood is the interactions between community residents, intimate and cooperative human relationship, play an important role in the sense of belonging and achieving common needs and requirements. So the neighborhood could be the most essential factor in vitalizing community.

## Literature Review

The studies on the sense of community based on the neighborhood started in England and US in 1950's where new housing complex development was boomed. Rapid urbanization after World War II caused massive housing supply and residential move to suburbs with the towns' obsolescence. This kind of residential breakdown had an influence on the sense of community

Generally neighborhood is the small group of people who recognize the common social bond and who live at the geographically adjacent area, where,

i) the areal range is determined by both physical and residents' social characteristics, ii) its members do the social interactions on the common areal platform (Porteous, 1986). 'Sense of community' is to have the attachment to the place, and to have the sense of belonging and mutuality (Robert & David, 1988) sharing common way of life. Therefore neighborhood is that the status where neighbors living in certain areal range share the sense of community.

Earlier studies on the sense of community were mainly about the relation with the physical housing environment but gradually studies identifying the relation between the sense of community and the residents' social-psychological factors were implemented. There are some studies on this subject overseas such as the study on the correlation between heterogeneity and housing satisfaction of existing housing complex and public housing centered on the public housing supply (Varady and Wolfgang, 1998; Burdy and Role, 1989), discussions on social mix (Xavier and 2 others, 1999) and the sense of community identified in environment-psychological behavior approach (Greenberg et al., 1996; Wilson and Baldassare, 1996). These studies mainly use the variables like race, income and the length of occupancy.

Gans (1961) showed that the residents' common interests and common value rather than the physical factors of the complex have more influence on their intimacy, and that in the social interaction with the neighbor, homogeneity is more important than the accessibility. According to the study on an apartment complex' neighborhood by Koucho (江上涉), the most active neighboring people are fulltime housewives and they are bringing up and educating their kids in the life-cycle viewpoint. His study showed the adjacency doesn't mean the neighborhood so there need some commonly shared space for neighboring with unseen neighbors. According to Raymond Toh Chun Parn's study on the apartment complex reconstructed by HDB, Singapore, HDB apartment complex residents feel the most strong sense of belonging (85.5%), which is proportional to the length of their occupancy. The longer the length of occupancy, the more the neighboring acquaintances and the safer they feel so environmental improvement of the complex increases the residents' intimacy about their housing environment, which would contribute to the housing stability. Fried and Gleicher (1981) insists that

housing satisfaction come from the intimacy or friendship with the neighbors.

Domestic studies are divided into 3 groups based on the point of view that identifies the neighborhood such as i) studies that identify the neighborhood associated with physical characteristics like Yeon-sook Lee (1990) and Sei-wook Shon (1992), ii) studies that analyze the neighborhood using demographic and housing-ecological factors like Jung-sun Kim (1993), and iii) studies that analyze the neighborhood using the physical as well as demographic and social factors like Bok-cha Yoon (1989), Jae-myung Ha (1989) and Ryong Woo (1995).

In case of the studies on housing satisfaction associated with the neighborhood, Yeol Choi (1999) identifies the neighborhood satisfaction through evaluating the satisfaction on the environment and public/adjacent facilities. Si-young Lee (1997) shows the housing satisfaction through organizational and environmental factors and identifies the relation between housing layout and the sense of community.

In most of the studies on neighborhood, they focus the quantitative variables like the number of the intimate neighbors, contact degree and intention to neighbor etc. Bok-cha Yoon and her colleagues (1989) include the psychological variables like the feeling of attachment and homogeneity in their study but it doesn't extend to the discussion on the community vitalization.

Community vitalization can be achieved through improving housing satisfaction and thus increasing residents' sense of community, for which there need qualitative variables for neighborhood. Therefore, in this study we are going to take an approach to vitalize the community analyzing overall influences that qualitative and quantitative characteristics of neighborhood as well as the residential and housing complex characteristics have on the housing satisfaction.

## **Methodology**

### **Research Design**

In this study we would like to identify the influences that the sense of community and neighborhood have on the housing satisfaction and to show how to vitalize the housing complex with each characteristics of residents and complex itself. Here, the characteristics of residents are family life cycle by the age of the first child, length of occupancy and the housing tenure. The characteristics of housing complex are housing size, building layout and design/shape of buildings. Neighborhood is defined as the number of neighbors, social interactions with neighbors and homogeneity with them based on the community concept and other previous studies.

<Study subject 1> Among the characteristics of residents an Among the characteristics of residents and housing complex, what is the affecting factor on the neighborhood?

<Study subject 1-1> Among the characteristics of residents and housing complex, what is the affecting factor on the number of neighbors?

<Study subject 1-2> Among the characteristics of residents and housing complex, what is the affecting factor on the social interaction with neighbors?

<Study subject 1-3> Among the characteristics of residents and housing complex, what is the affecting factor on the homogeneity with neighbors?

<Study subject 2> What is the impact that the characteristics of residents, housing complex and the neighborhood could affect the housing satisfaction?

### **Research method**

#### **Sampling**

Sample is selected by three criteria. i) For the accuracy of the survey result, select the apartment complex in the area where the residents share the same service facilities and where there are social-economical homogeneity, ii)

Include various characteristics of housing complex (size, corridor type, etc.) in order to identify the relation between the physical traits of the complex and the neighborhood, iii) Select the qualified area enough to be a residential area (at least 8 years passed since living in) so that the residents could feel the sense of community. According to above criteria, 2 model site in Bundang were selected.

Bundang, southwest to Seoul, is located in Sungnam, which is a town with planned population of 250,000 people. Model site is the complex that many new architectural and design attempts were introduced to improve the planning quality of the apartment complex with the various sizes from 17py to 79py and corridor types. There is an adjacent park and the size, location and other conditions of each complex are almost the same.

**Table 1. Outline of sample site**

items		Site A	Site B
<b>Brief</b>	Year of living in	16 <sup>th</sup> floor/ below: '91 .9	16 <sup>th</sup> floor/ below: '91 .9
		17 <sup>th</sup> floor/up: '92.6	17 <sup>th</sup> floor/up: '92.6
<b>Desc.</b>	# of householders	1,874 households	2,424 households
	Area (py)	17-73py	12-79py
<b>Collected Survey</b>	# of distributed survey sheets	250 copies	250 copies
	# of returned survey sheets (rate)	198 copies (79.2%)	208 copies (83.2%)
	# of total valid samples (rate)	408 copies (81.6%)	

## Survey

### Contents of the questionnaires

Survey sheets are consist of questionnaires of social-economic characteristics, characteristics of house and housing complex and the neighborhood related items asking the number of neighbors, social

interaction with them and the homogeneity. Questionnaires on the neighborhood are to answer from the strongly agree (point 5) to strongly disagree (point 1), which uses Likert scale. Number of questionnaires on housing satisfaction are all 17 and asking about physical housing environment (4 items), maintenance (5 items), adjacent facilities (5 items), neighborhood (3 items) and they are also measured by Likert scale.

### Reliability and Validity

The research tool used in this study was approved as valid through the detailed review of 3 professionals. Reliability was tested using internal consistency reliability method with the preparatory survey results on housing satisfaction, and Cronbach's alpha is 0.8148 which means high validity.

### Data Collection

Data was collected through preparatory survey and real survey. The preparatory survey was performed to the housewives and professionals who lived in the selected complexes. With the preparatory survey results, some questionnaires on neighborhood and housing satisfaction are revised for the real survey.

Surveyors visited the households individually, and distributed the survey sheets and took them back. Real survey was performed during 04/ 08~ 25/ 08/ 2000. Total 500 copies of survey sheets are distributed and 408 copies were returned and used in final analysis.

### Analysis

Frequency, Percentage and crosstabs are used for identifying the general status of target people. For the study subject 1, ANOVA and t-test, for the study subject 2, ANOVA, t-test and regression were used. SPSSWIN 8.0 was used as a statistical package.



**Table 2. Household and housing characteristics**

	<b>Variables</b>	<b>Classified as</b>	<b>Frequency (%)</b>
<b>Household Characteristics</b>	# of members	Less than 2 persons	56 (14.2)
		3 persons	92 (23.4)
		4 persons	210 (53.4)
		More than 5 persons	35 (8.9)
		Total	393 (100.0)
	Age of the Householders (Average: 44)	Less than 30 years old	53 (13.0)
		31-40 years old	137 (33.6)
		41-50 years old	151 (37.1)
		51-60 years old	45 (11.0)
		More than 61 years old	22 (5.4)
		Total	408 (100.0)
	Family life cycle (the age of the first child)	Preschool (under 7)	76 (23.8)
		Elementary school(8-12)	78 (24.5)
		Middle, high school(13-18)	81 (25.4)
		Grown-ups(over 19)	84 (26.3)
		Total	319 (100.0)
	Length of Occupancy (Average: 3.7 years)	Less than 2 years	172 (43.3)
2-5 years		100 (25.2)	
More than 5 years		125 (31.5)	
Total		397 (100.0)	
Household income	Average annual salary 36,550,000 won		
<b>House Characteristics</b>	Housing size (Average: 32.2py)	20py	203 (49.8)
		30py	144 (35.3)
		50,60py	61 (15.0)
		Total	408 (100.0)
	Housing tenure	Own	269 (67.6)
		Rent	129 (32.4)
		Total	398 (100.0)
	Building layout	□ shape	93 (22.8)
		▭ shape	315 (77.2)
		Total	408 (100.0)
	Corridor type	Stairway type	140 (34.3)
		Open Corridor	268 (65.7)
		Total	408 (100.0)

## Survey Result and Discussion

### General characteristics

#### Household and housing characteristics

General characteristics shows that the average number of family members is 3.56, and that the average length of occupancy is 3.7 years. Households of 4 members are ranked first as of 53.4% and householders' age of 41-50 is also ranked first as of 37%. In the family life cycle, the rate of the households with the grown-up kids is high. The average annual income is 35,660,000won.

The housing characteristics show that the proportion of 20py is higher, and that 67.6% of the respondents have their own houses. <In the building layout, the rate of □ shape is higher than □ shape>, the apartments with stairway type corridors amount to 34.3% and those with open corridors amount to 65.7%.

#### Neighborhood characteristics

In the questionnaires on the spacious range associated with the neighborhood, 27.4% of respondents consider <4 of all the model site> as their neighbors, <same complex> comes next and <a few complexes close to my complex> comes next.

In the number of neighbors based on the intimacy, both the number of neighbors who I know just by face and the number of neighbors who I visit sometimes are mostly less than 5 houses. Answer <None> to the question about the number of neighbors who I can have a heart-to-heart talk amounts to more than 50%.

Table 3. Range of neighborhood

Classified as	%
All the model site	110 (27.4)
Same apartment complex	95 (23.6)
A few apartment complexes near my complex	85 (21.1)
A few buildings near my apartment building	55 (13.7)
Same building	24 (6.0)
Bundang, Sungnam	15 (3.7)
A few houses on the same floor	8 (2.0)
Others	8 (2.0)
Households using the same elev. Or stairs	2 (0.5)
Total	402 (100.0)

Figure 1. Number of neighbors known just by face

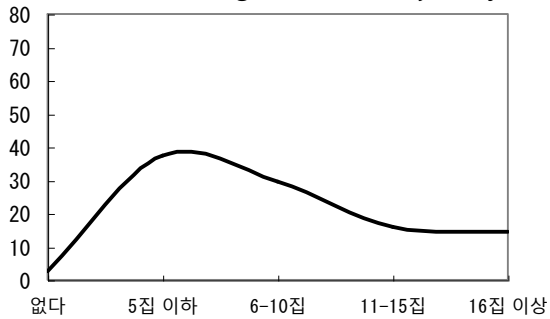
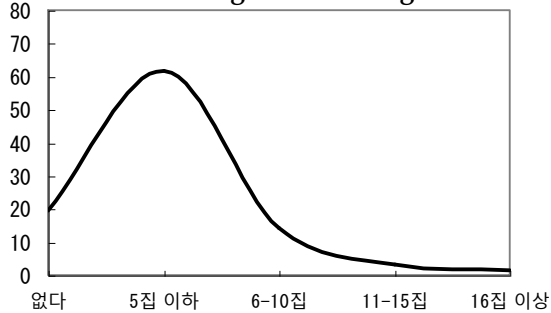


Figure 2. Number of neighbors visiting sometimes



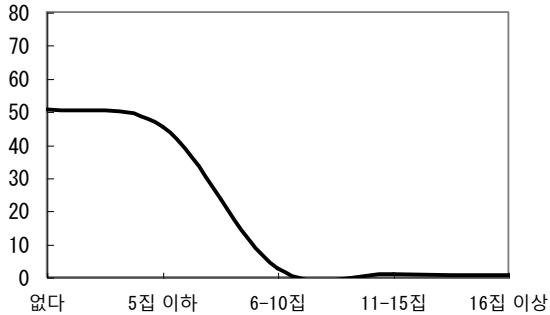
**Figure 3. Number of neighbors having a heart-to-heart talk**

Table 4 shows measurement of the degree of social interactions. The point for <I know many neighbors of my apartment building> is much less than <I want to be intimate with as many neighbors as possible>, which shows that the real interactions are less than expected.

**Table 4. Degree of social interactions with neighbors**

Measurement items on social interactions	Average
I know of many people living in the same apartment building.	2.79
I have friendly relationship with people in this apartment complex.	2.93
I would be sorry if I move to another place	3.07
My kids are going well with other kids in this apartment complex.	3.08
I want to be intimate with as many neighbors as possible	3.47
Average total	3.07

When asked how much they want to be intimate with their neighbors, <Visiting sometimes> is the highest answer as of 66.8%, <Just know by face> is 21.7% and <Having a heart-to-heart talk> is 11.6%. That is, they want neighboring with as many people as possible but to the degree that allows visiting sometimes.

Surveys on the homogeneity are performed with the questionnaires on

living standard, educational level, age and interests/hobbies. The result shows that they feel the homogeneity in the living and educational aspect rather than the age or interests.

**Table 5. Homogeneity with neighbors**

Measurement items on homogeneity	Average
Living standard of the people in this complex is similar to my family's.	3.33
Educational level of the people in this complex is similar to mine.	3.21
People in this complex are of my age	2.68
Interests on spare time of the people in this complex are similar to my family's	2.76
Average total	3.00

Note: Average is calculated from the strongly agree of 5 point to strongly disagree of 1 point.

### **Relationship between the neighborhood and the household and the housing characteristics**

#### Factors on the number of neighbors

Based on the intimacy, the number of neighbors is grouped into 3 categories. <Just know by face> amounts to 37.3% as the highest rate, <6-10 houses> of 29.7% comes next. These rates have some statistically semantic difference according to the length of occupancy, size of the house and building layout. For example, the households of 2-5 year occupancy has the probability of knowing 6-10 households, and the households of more than 5 year occupancy has more friendly neighbors than others. Households of 20py probably know less than 5 households but the households of 30py are probable to know more than 6 households. Households of □ shaped layout probably have more intimate neighbors than the households of □ shaped layout

Table 6. Factors on the number of neighbors known by face

		None	Less than 5 houses	6~10 houses	11~15 houses	More than 16 houses	Total
Overall average		2.5	37.3	29.7	15.9	14.6	100.0
Length of Occupancy	Less than 2 years	6.0	48.8	27.7	11.4	6.0	100.0
	2-5 years	0.0	32.2	41.7	14.6	11.5	100.0
	More than 5 years	0.0	25.8	22.6	23.4	28.2	100.0
	Statistics						
Housing Size	20py	3.6	47.2	23.9	14.7	10.6	100.0
	30py	1.4	23.0	37.4	16.5	21.6	100.0
	50, 60py	1.6	37.7	31.1	18.0	11.5	100.0
	Statistics						
Building layout	□ shape	3.4	42.7	26.1	14.1	13.7	
	□ shape	1.2	29.4	35.0	18.4	16.0	
	Statistics						

Table 7. Factors on the number of neighbors visiting sometimes (unit: %)

		None	Less than 5 houses	6-10 houses	11-15 houses	More than 16 houses	Total
Overall average		19.4	61.6	14.3	3.1	1.6	100.0
Family life cycle	Preschool kids	16.2	74.3	6.8	2.7	0.0	100.0
	Elementary school kids	16.0	61.3	21.3	1.3	0.0	100.0
	Middle/high school kids	18.2	51.9	16.9	6.5	6.5	100.0
	Grown-ups	15.4	66.7	14.1	2.6	1.3	100.0
	Statistics						
Length of occupancy	Less than 2 years	26.2	60.4	10.4	3.0	0.0	100.0
	2-5 years	15.6	68.8	12.5	2.1	1.0	100.0
	More than 5 years	13.3	58.3	20.0	4.2	4.2	100.0
	Statistics						

In the <Number of neighbors visiting sometimes>, the answer of less than 5 amounts to 61.6% and even the answer of none amounts to 19.4%. These data has some difference according to the family life cycle and the length of occupancy. For instances, the households having preschool kids and those of shorter length of occupancy have smaller number of intimate neighbors than others.

In the <Number of neighbors having a heart-to-heart talk>, the answer of none amounts to more than 50%. These data has some difference according to the family life cycle. Among the households answering none, the rate of households with grown-up kids is higher than others and the rate of those with elementary school kids is the lowest.

**Table 8. Factors on the number of neighbors having a heart-to-heart talk**

		None	Less than 5 houses	6-10 houses	11-15 houses	More than 16 houses	Total
<b>Overall Average</b>		50.5	45.3	2.6	1.0	0.5	100.0
<b>Family life cycle</b>	<b>Preschool kids</b>	52.5	47.5	0.0	0.0	0.0	100.0
	<b>Elementary school kids</b>	40.2	57.5	1.1	1.1	0.0	100.0
	<b>Middle/high school kids</b>	48.1	44.2	2.6	2.6	2.6	100.0
	<b>Grown ups</b>	57.9	38.2	2.6	1.3	0.0	100.0
	<b>Statistics</b>						

Analyzing the number of neighbors based on the resident characteristics (family life cycle, length of occupancy, housing tenure) and the housing complex characteristics (size of a house, <building layout>, type of corridor) shows that resident's personal factors like family life cycle and the length of occupancy, size of the house and <building layout> are the variables affecting on the number of intimate neighbors. Households with school kids have more intimacy with their neighbors than those with preschool kids because they

can share school things each other. Also those with longer length of occupancy at the same area have more intimacy with their neighbors. Factors like the size of a house and < building layout> affect only the <number of neighbors known by face>. The households with the bigger size of house and the bigger layout have more neighbors known by face.

#### Factors on the social interactions with neighbors

The factors which affect the social interactions include the length of occupancy, housing tenure and the corridor type. That is, when the length of occupancy is longer, they have their own house and have the corridor of stairways type, they have more active social interactions. The length of occupancy is influential on the social acquaintances with the neighbors as well as the number. To own a house means longer length of occupancy of 2 year contracted rent. For the social interactions, housing stability such as the length of occupancy and the housing tenure should be preceded

**Table 9. Factors on the social interactions**

		Social interactions	Analysis method	Average	Proba-bility	Duncan test
		High low 4 3 2				
Length of occupancy	Less than 2 years	<input type="checkbox"/>	One-way ANOVA	2.86	P=0.000	A
	2-5years	<input type="checkbox"/>		3.19		B
	More than 5 years	<input type="checkbox"/>		3.26		B
Housing tenure	Own	<input type="checkbox"/>	t-test	3.16	P=0.000	-
	Rent	<input type="checkbox"/>		2.89		-
Corridor type	Stairway	<input type="checkbox"/>	t-test	3.19	P=0.000	-
	Open corridor	<input type="checkbox"/>		3.01		-



## Factors on the homogeneity with neighbors

The analysis result of the factors on the homogeneity with neighbors shows that the family life cycle, the size of a house and the type of corridor are influential. When they are in the stage with elementary school kids in the life cycle, have a house of 30py with the corridor type of stairs, they feel stronger homogeneity with their neighbors.

**Table 10. Factors on the homogeneity with neighbors**

		Homogeneity	Analysis method	Average	Proba-bility	Duncan Test
		High low 4 3 2				
Family life cycle	Preschool kids	□	One-way ANOVA	3.03	P=0.035	A
	Elementary school kids	□		3.13		B
	Middle/high school kids	□		3.00		A
	Grown ups	□		2.88		A
Housing Size	20py	□	One-way ANOVA	2.94	P=0.013	A
	30py	□		3.11		B
	50, 60py	□		2.97		A
Corridor Type	Stairway	□	t-test	3.08	P=0.036	-
	Open corridor	□		2.96		-

## Analysis result of housing satisfaction

In the satisfaction with the housing complex, satisfaction with shopping facilities like supermarkets and markets is first rated as 3.70 (points), and there comes next in the order of educational facilities (schools, institutes) (3.42), level of neighbors in the same complex (3.35), disposal of garbage and the recycled (3.30), direction of a house (3.29) and privacy (3.26). On the contrary, satisfaction on these are rated from the last in the order of safety of

children's playground (2.63), public welfare facilities (2.63), facility examination (2.68) and the number of households in the apartment complex (2.84)

These are grouped into the physical characteristics, maintenance characteristics, neighboring facility characteristics and neighborhood characteristics. The satisfaction with the maintenance characteristics is the lowest and the satisfaction with the neighborhood characteristics is the highest.

Overall housing satisfaction is the sum of each satisfaction and the strongest satisfaction factor is the neighborhood and neighboring facility characteristics. It is estimated that in case of the target complex, improving the neighborhood satisfaction would raise the overall satisfaction by 48%.

The result of validating the difference in the housing satisfaction according to resident/ housing complex/ neighborhood characteristics shows that there are some semantic difference in each factor group except the length of occupancy. In case of family life cycle, the households having children in middle or high school feel the highest satisfaction and those with preschool kids feel the lowest satisfaction.

In the housing tenure, satisfaction is higher when they own the house than they rent. Those living in an apartment with the stairway corridor, those who have higher homogeneity with their neighbors and those who have more social interactions, feel the higher housing satisfaction. Home-ownership gives the economical and psychological stability and it is natural that the satisfaction of home-ownership is stronger than rent. Living in an apartment with the stairway corridor, just small number of people can use the elevator or the gate, which gives more satisfaction in convenience.

**Table 11. Detailed items of housing satisfaction and general characteristics**

Classified as	Items	Average	Overall average
Physical characteristics of the complex	Layout of the complex	3.22	3.10
	# of households	2.84	
	Exposure	3.29	
	Size	3.06	
Maintenance characteristics of the complex	Maintenance & facility examination	2.68	2.85
	Disposal of garbage and the recycled	3.30	
	Safety examination on playground	2.63	
	Managing staff's service mind and kindness	2.90	
	Overall status of the apartment	2.77	
Adjacent convenient facilities	Welfare facilities	2.63	3.13
	Educational facilities(school, institute)	3.42	
	Shopping facilities like supermarket and market	3.70	
	Spaces for rest and recreation	2.98	
	Roads and parking lot	2.97	
Neighborhood characteristics	Level of neighbors	3.35	3.28
	Relation with neighbors	3.20	
	Privacy	3.26	
	Overall average		3.09

Note: Average is calculated from the strongly agree of 5 point to strongly disagree of 1 point.

**Table 12. Regression result of the individual satisfaction affecting overall complex satisfaction**

Variables	(t-value)
Satisfaction on the physical characteristics of the complex	0.075 (1.416)
Satisfaction on the maintenance characteristics of the complex	0.073 (1.253)
Satisfaction on the adjacent convenient facilities of the complex	0.462 (6.147) ***
Satisfaction on the neighborhood of the complex	0.479 (6.200) ***
Adj R <sup>2</sup>	25.3%

The factors affecting the housing satisfaction based on the relation between each factor group are shown in Table 14. The factors on the physical characteristics of housing complex are the size of a house and homogeneity with neighbors. When they have bigger house, and when they have neighbors with homogeneity, physical housing satisfaction is high. Neighbor homogeneity factor contributes to the physical satisfaction by 37%, even though the neighbor homogeneity has no direct connection with the satisfaction on the real physical housing characteristics, its impact on the physical housing characteristics.

The factor on maintenance satisfaction is the size of a house, bigger the house better the status of a house. To prevent the obsolescence and focus the maintenance, management service is required also in the small apartments as well as in the large ones.

The satisfaction with adjacent facilities is higher in the household with active social interactions. Social interactions are not deeply related with the adjacent facilities but social interactions can be activated in those facilities nearby. Therefore whether there are those facilities and their locations can have influences on the social interactions between neighbors, more discussions on the placement and location of the facilities as well as their standard or quality level.

## **Conclusions**

Recently, in the criticism about the quantity oriented massive supply of housing complex development, the catchphrase of housing sector in the '4<sup>th</sup> Land Development Planning' was determined as 'Make our community better'. For this, physical space planning has been much discussed so far but the issues on social and psychological aspects like the quality of life or sense of community among residents are not deeply discussed.

**Table 13. Validating difference in the housing satisfaction according to resident characteristics, housing complex characteristics and neighborhood characteristics**

	Variable	Classified as	N	Average	F Value	Probability	Duncan Test
Resident characteristics	Family life cycle	Preschool kids	58	2.94	2.90	P=0.036	A
		Elementary school kids	73	3.06			A
		Middle/high school kids	72	3.20			B
		Grown ups	64	3.14			B
		Total	267	3.09			-
	Length of occupancy	Less than 2 years	139	3.07	n.s.		
		2-5 years	83	3.10			
		More than 5 years	103	3.09			
		Total	325	3.08			
	Housing tenure	Own	219	3.14	0.18	P=0.000	
Rent		107	2.98				
Housing complex characteristics	Housing Size	20py	166	2.93	21.03	P=0.000	A
		30py	117	3.17			B
		50,60py	52	3.42			C
		Total	335	3.09			-
	Building layout	□ shape	197	2.99	0.28	P=0.000	
		□ shape	138	3.22			
	Corridor Type	Stairway	114	3.28	1.41	P=0.000	
		Open corridor	221	2.99			
Neighborhood characteristics	Homogeneity	Low	186	3.01	0.001	P=0.004	
		High	136	3.19			
	Social interactions	Low	162	3.00	2.39	P=0.001	
		High	152	3.20			

**Table 14. Regression analysis of the factors on the housing satisfaction**

Variables		Satisfaction on physical characteristics	Satisfaction on maintenance	Satisfaction on adjacent facilities	Satisfaction on neighborhood
		(t-value)	(t-value)	(t-value)	(t-value)
Resident characteristics	X1 age of first child	-0.033(-0.531)	0.081(1.263)	0.093(1.525)	-0.025(-0.449)
	X2 leng. of occupancy	0.040(0.691)	-0.023(-0.383)	0.007(0.111)	-0.027(-0.484)
	X3 housing tenure	-0.103(-1.779)	-0.061(-0.992)	-0.065(-1.063)	-0.033(-0.610)
Housing complex characteristics	X4 housing size	4.11E-02(5.814)***	1.20E-02(3.391)***	0.104(1.320)	1.24E-02(4.076)***
	X5 corridor type	-0.059(-0.774)	-0.125(-1.791)	-0.075(-1.264)	-0.035(-0.584)
	X6 building layout	-0.322(-2.086)	-0.100(-1.233)	0.422(5.239)***	0.031(0.450)
Neighborhood characteristics	X7 homogeneity	0.369(3.497)***	0.068(1.115)	0.005(0.077)	0.307(4.550)***
	X8 social interactions	0.103(1.592)	0.115(1.907)	0.121(2.056)*	0.265(4.797)***

Note: Housing tenure: 1=ownership 2=rent, Corridor type: 1=stairway 2=open corridor, Building layout: 1=□ shape 2=□ shape.

The factors on the neighborhood satisfaction include the size of a house, homogeneity with the neighbors and the social interactions. As suggested in Table 13, it is the same as when they have a bigger house, have homogeneity with their neighbors and have active social interactions, the housing satisfaction is higher.

Considering these aspects, through this study we wish to identify the correlation between the apartment residents' neighborhood and housing complex satisfaction with the goal of community activation to improve the quality of residents' life in an apartment community. For this objective, we performed the literature review and the actual study through the surveys against the 408 residents in Model Site in Bundang.

The analysis results are summarized as below.

First, the analysis on the residents' neighborhood shows that the spacious range the residents think as their neighborhood is limited to the complex where they live or a few complexes near by. In the number of neighborhood based on the intimacy, both the number of neighbors just known by face and

the number of neighbors visiting sometimes are all less than 5 households. The answer of none to the questionnaire about the number of neighbors who have heart-to-heart talk amounts to more than 50%. Many residents feel homogeneity with their neighbors in the living standard or the educational level. They want to know many neighbors but the number of neighbors they know in practice is much less than that. The intimacy degree they want is just visiting sometimes.

Second, we analyzed the factors related with the number of neighbors, social interactions, homogeneity with neighbors using the resident's personal characteristics (family life cycle, housing tenure of the house) and the physical complex characteristics (size of the house, complex layout, shape of building etc.). The result is like the following. The factors on the number of neighbors just known by face are the length of occupancy, size of a house and building layout. But the factors on the number of neighbors having a heart-to-heart talk is the family life cycle. The factors on the number of neighbors are different according to the intimacy with their neighbors. It is thought that the size of a house and building layout influence forming of neighborhood and that the length of occupancy and the family life cycle influence developing of neighborhood. The social interactions are tightly related with the housing stability like the length of occupancy and the housing tenure so the housing stability should be preceded to activate the social interactions. Homogeneity with neighbors is deeply related with the family life cycle, the size of a house and the type of corridor.

Third, the result of the analysis on the residents' housing satisfaction shows that overall housing satisfaction is related with the neighborhood satisfaction and nearby facility satisfaction. To improve the housing satisfaction, the neighborhood and the adjacent facilities are considered. High priority should be placed on the plan to activate the neighborhood in planning the housing policy.

From the study results, it is identified that neighborhood is tightly related with housing satisfaction and that the good neighborhood means having the high homogeneity with the neighbors and active social interactions. When there are elementary school kids because they can share school things, with

the house size of 30py probably with elementary school kids, with the stairway type corridor where we can use the elevator and main gate, the homogeneity is high.

When the length of occupancy is long and when they have own houses, social interactions are more active.

Therefore the alternatives to promote the homogeneity with neighbors and social interactions to improve the housing satisfaction are suggested as below.

First, there need to develop some indoor space and programs for kids and parents together to neighbor and participate. Existing children's playground is an outdoor place and used just as a playing space. So space planning related with parents and kids participation programs are needed.

Second, effective usage of neighboring facilities is required. These facilities are the places where the interactions with neighbors happen and their influence on the overall housing satisfaction, neighborhood satisfaction and the social interactions with neighbors is high. It is required to make the environment pleasant so that people enjoy and stay longer.

Third, there should be a plan to increase the length of occupancy. Alternatives and policies for housing stability should be set up. In the physical environment, inconvenience and concerns should be improved.

This study further identifies the correlation between neighborhood and housing satisfaction to increase the effectiveness of neighborhood analysis whereas the previous studies mainly focus the form of neighborhood and the factors affecting it. Also the neighborhood items which has been somewhat ignored as a housing satisfaction factor are used with other physical and social factors and this extends and deepens the analysis.

Domestically the neighborhood and the sense of community are not much considered in designing apartment complex and quantitative house supply and physical improvement of housing environment are still required. But introducing the concept of improving housing satisfaction through vitalized neighborhood could bring the improvement of quality of life. And activating the community of housing complex leads to the residents' attachment to the community and it is sure that this can be one of the alternatives for 'making our community better'.



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