

Preference for Spatial Planning Elements of Common Spaces in Senior Congregate Housing according to Pre-Senior Citizens*

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Abstract : The purpose of this study is to analyze the preference of spatial elements for common space planning in senior congregate housing. For the study, 500 potential consumer's residing in Seoul was surveyed using the questionnaire in the social survey methodology.

As for the common spaces, gardens, treatment, and exercise rooms were preferred. A combination of both separate and group arrangement of the buildings was preferred, indicating that people wanted separation of the common space and the individual living units.

Second, people preferred sharing parts of the common space with their neighbors and as is the traditional custom, preferred to take off their shoes at the entrance to individual units.

Third, for the furniture and facilities, they wanted the manager room in the lobby, the small meeting rooms in the public dining room, a fitness center in the activity room, the rack or alcove to store items in front of an individuals unit in the hallway, a chair to sit down in the elevator, and the chair to rest on the stairway landing.

Fourth, in terms of priority for planning the senior citizens' community housing, safety, familiarity like a regular home, reduced isolation and loneliness, sense of belonging, economic factors, aesthetic appreciation, daily life supplement, variety, and self-identity were answered in that order.

Key Words : senior congregate housing, spatial planning element, common space, preference

I. Introduction

Korea has already become an 'Aging Society' and is expected to become an 'Aged Society' by 2019. This development along with the nuclear family, change in conscious of taking care of the senior citizens and social entry of women have necessitated development of facilities and housing dedicated for senior citizens. Furthermore, extension of the retirement age made it necessary for the active preparation of the third generation and the continuous study of senior citizen

housing for the middle class, the majority of the society.

As an alternative, various preceding studies have proposed senior congregate housing that seniors, who are fairly healthy and do not need, full time care, may choose to stay. Senior congregate housing implies housing where administrator, common space, and congregate activity programs are operated, and in such an environment senior citizens may live individually and be furnished with social · recreational programs, support living, and administration services.

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Development of such senior congregate housing has advantages of low living expense, service, and convenient living facility through congregate administration of a common space; due to these advantages, friendship with neighbors is promoted and satisfaction level of living is increased. Therefore, planning of common spaces need to be identified and pursued.

As such, the objective of this study is to understand the pre-senior citizens' preference of common space needed for developing senior congregate housing projects.: and to present the direction of the common space planning for future housing. The result is expected to be used as the basic information for development of the senior congregate housing suitable for a Korean environment.

II. Research Method

1. Research Subject

500 pre-senior citizens (between 50~59 years) residing in Seoul were selected and a convenience sample was conducted in order to reflect an even distribution over region and residence. Pre-senior citizens have been selected as they will become the key consumers around the year, 2019 when Korea will become an aged society. In the sampling process, effort was made to achieve a uniform distribution in area and residence type. The ratio of Gangnam to Gangbuk were similarized, and purposive sampling was used in residence types: apartment, detached housing, and other commercial buildings.

2. Research Questionnaire

The questionnaire used in the research was constructed based on results of preceding studies. The general characteristics of the sample studied were demographic characteristics (gender, age, education

level, income, and occupation) and residential characteristics (residence type, ownership, size, residing period, and residing area). A questionnaire on the kinds and arrangement of common space, understanding of usage of common space (usage of common space, entrance methods, activity on the balcony, and garden activities), types of behavior in common space (washing and drying of laundry, and dining in the common cafeteria), and planning elements of senior congregate housing were also constructed.

3. Research Method and Data Processing

A social survey method was used for 20 days from November 20 to December 20, 2003 via a questionnaire. In order to increase the credibility of the survey data, researchers held one-to-one interviews in which they asked questions and recorded the answers. The collected data were processed through SPSS 10.0 for windows and frequency, percentage, average value and cross table analysis were conducted for each data. In addition, t-test and ANOVA (Sheffe) were used to define the importance rating.

III. Results and Discussions

1. The General Characteristics of the Research Subjects

1) Social, Demographic and Economic Characteristics

For the social, demographic and economic characteristics of those surveyed pre-senior citizens, age, gender, education level, income, old age expected income and occupation were all recorded and taken into consideration. 61.2% of those surveyed were in their early fifties and 38.8% were in their late 50s with average age of 53.7, and 46.8% and 53.2% were men and women, respectively, showing a similar distribution. In the education level, 92.4% were high

school graduates or lower, accounting for the largest proportion of the survey targets. The income expected in the old age had declined to an average 1.92 million won annually, attributed to the declination of the number of families and reduction of income. Sales and service accounted for the highest proportion of occupations with 26.05% but showed an even distribution in categories with housewives and administrative work at 21.6%, others at 17.8% and specialized management at 13.0%.

2) Residential Characteristics

For the residential characteristics of the surveyed pre-senior citizens, residence type, residence ownership, residence size, residing period, and residing area were surveyed. For the residence type, apartments accounted for the largest proportion at 42.2% followed by detached house at 35.2% and other row houses or commercial buildings at 22.6%. For ownership, self-owned-dwellings accounted for the highest at 85.0%, in terms of size of the residence, the average was 33.6 pyung and living spaces above 30 pyung - less than 40 pyung accounted for the largest at 44.6% and for the residing period, more than 10 years accounted for the highest at 28.4%. The residing areas were Kangnam and Kangbuk at 59.4% and 40.6%, respectively.

2. The Kinds and Arrangement of the Common Space

1) The Kinds of common space

According to the survey, pre-senior citizens most preferred a medical treatment room with a score of 3.74 out of 4 followed by the exercise room at 3.70, garden at 3.58 and activity room at 3.49. These results show that they are most concerned with health and have strong desires for exercise and recreational activities. The public laundry room received the lowest score at 2.97.

In regards to the usage of common space, Hong Hyung Ock (2001) has observed in ‘the result of

<Table 1> General Characteristics of Research Subject

General characteristics	Category	Frequency (%)
Age	50-54 years	306(61.2)
	55-59 years	194(38.8)
Gender	Male	234(46.8)
	Female	266(53.2)
Education Level	less than Elementary School Graduation	98(19.6)
	Middle School Graduation	195(39.0)
	High School Graduation	169(33.8)
	more than Univerity Graduation	38(7.6)
Income	less than 1mil won	5(1.0)
	1mil-2mil won	62(12.4)
	2mil-3mil won	112(22.4)
	3mil-4mil won	117(23.4)
	more than 4mil won	204(40.8)
Old Age Expected Income	less than 1mil won	70(14.0)
	1mil-2mil won	196(39.2)
	2mil-3mil won	131(26.2)
	3mil-4mil won	58(11.6)
	more than 4mil won	45(9.0)
Occupation	housewife	108(21.6)
	service and salesman	130(26.0)
	a man of affairs	108(21.6)
	professional, management	65(13.0)
	etc.(workers, technical engineer)	89(17.8)
Residence Type	Detached House	176(35.2)
	Apartment	211(42.2)
	Row House/Others (Commercial Bldg etc)	113(22.6)
Residence Ownership	Owner	425(85.0)
	Rental	75(15.0)
Residence Size (Average 33.6pyung)	Less than 20pyung	30(6.0)
	Above 20pyung - Less than 30pyung	169(33.8)
	Above 30pyung - Less than 40pyung	209(41.8)
	Above 40pyung	92(18.4)
Residing Period (Average 7.1 years)	More than 1 year and Less than 5 years	223(44.6)
	More than 5 years and Less than 10 years	135(27.0)
	More than 10 years	142(28.4)
Residing Area	Kangnam	203(40.6)
	Kangbuk	297(59.4)

preference and attitude of senior congregate housing’ that for common space and facilities, preference for an

<Table 2> Necessity Level for Various Common Space

	Necessity Level (Average)
Treatment Room	3.74
Exercising Room	3.70
Garden	3.58
Activity Room(Hobby)	3.49
Barber/Hair Salon	3.45
Sauna	3.30
Supervisor Room	3.29
Common Living Room	3.27
Common Dining Room	3.27
Common Restroom	3.17
Guest Room	3.04
Common Laundry Room	2.97
Total Average	3.36

exercising room accounted for the highest, followed by garden, treatment room and hobby room, implying that even with slight differences in order, the type of common space that was most necessary were treatment, exercising and activity (hobby rooms).

Similarly, Hong Hyung Ock and Ji Eun Young (2004) had compared the view per region of the senior congregate housing in which all four regions (Seoul-Kyunggi, Busan, Gwangju and Daejeon) selected exercising rooms as the most necessary common space followed by sauna facilities. Therefore, given that health and fear of solitude are the highest concern for senior citizens, there should be planning of the common space to allocate treatment rooms and exercising rooms in the senior congregate housing.

2) Arrangement of the Common Space

Arrangement of the common space was divided according to the type and combination of public and individual spaces. In other words, it can be classified into distribution types in which the common spaces are distributed within the individual spaces, concentrated types in which all common spaces are arranged in a residential building, and separated types in which the common space is separated. The pre-senior citizens' preference of the common space arrangement was the

separated type (48.2%) followed by the concentrated type (34.6%) and distributed type (17.2%).

In the senior congregate housing arrangement, concentrated and detached types seemed to be more efficient than to separate the common space and the individual space, and in particular concentrating, the common space around the main entrance area is advisable. However, to promote communication between residents, common places should have chairs in the corridors and space should be provide in front of the elevator to chat, in between the individual space even though it is not allocated as a separate room to create a more intimate atmosphere as a home.

In the layout of the common space in relation to the related variables, there were significant differences per residence type. For the residence type, the dispersed type was preferred for detached houses while detached types were preferred for apartments, which is a very interesting result in which the current housing type characteristics has been reflected in the preference.

In terms of the current housing type, it showed statistically notable results. For those living in individual dwellings, the distributed type was the most preferred while residents apartment complexes preferred the separated type. This is an interesting result. It indicates that the current residence is directly correlated to their preference. Namely, for most apartments, the common spaces were assigned to individual dwellings in a separated type. It can be concluded that the characteristics of the current residence types led to such differences in preference.

3. Understanding of the Usage of Common Space

The preference on the usage of common space was

<Table 3> Preferred Arrangement of the Common Space

Type		Frequency(%)
Common Space Arrangement	Concentrated Type	173(34.6)
	Distributed Type	86(17.2)
	Separated Type	241(48.2)

<Table 4> Preference for Layout of Common Space by Residence Type

variable \ Item		Layout of common space				χ^2
		Concentrated	Dispersed	Detached	Total	
Residence Type	House	51(29.0)	46(26.1)	79(44.9)	176(100.0)	16.63**
	Apartment	80(37.9)	23(10.9)	108(51.2)	211(100.0)	
	Row house/Others	42(37.2)	17(15.0)	54(47.8)	113(100.0)	
	Total	173(34.6)	86(17.2)	241(48.2)	500(100.0)	

** p<.01

surveyed using the following variables the usage method of common space, entrance method, activities on the balcony, and garden activities.

1) Usage Method of Common Space

For the usage method of common space, sharing a partial common space with neighbors was most favored at 42.4%, followed by sharing a diverse common space under planning with neighbors (29.0%) and usage of space and facilities for only residents (28.4%). This could be construed as Korean pre-senior citizens positively viewing the sharing of common space with neighbors.

In regards to the related variables, there was a significant difference in statistics according to gender and expected old age income. In case of males, there was a higher preference of sharing the space with neighbors while women preferred to share only a partial part of the common space. This implies that men had more positive attitudes than women in sharing space and showed a desire to be more to their neighbors. In case of expected income after retirement, high-income earners of more than 4 million won a month preferred the space to be used only by the residents themselves while low-income earners of less than 1 million won per month had a tendency towards sharing the common space with all their neighbors.

2) Entrance Method

For the preference of the entrance method, taking off shoes at the entrance accounted for 75.6% and taking off shoes at an individual's space accounted for 24.4%.

This implies that the semi-senior citizens reflected the concept of the current facilities for the aged or common housing where people wore shoes in the common spaces and took off shoes in the individual spaces.

3) Activity in Balcony

The preference of activities on the balcony were in the order of growing flowers (61.2%), drinking tea (20.2%), suntanning (11.0%), drying laundry (6.0%) and others (1.6%). The activities on the balcony do not only have the significance of providing diverse activities in an individual space but also links the external and internal space. That is to say the coherence between the internal space and external space of the facilities for the aged enhanced emotional support between residents and the visual contact helped secure a mutual psychological security.

4) Garden Activity

The garden is a very important factor in planning for senior congregate housing as it is a space providing diverse leisure activities and social activities. As observed in the case studies of the previous chapters, there are no specific plans on gardens in Korea and the usage frequency is low. However, in the US, the housing arrangement was centered on the garden, and was a space used to support diverse activities of senior citizens.

Such garden planning does not merely enhance the sense of community with neighbors. The relativity of the natural landscape with people's health and the importance of a garden in spatial planning for senior

<Table 5> Preference for Usage of Common Space by Gender and Expected Income

variable		Item	Usage method of common space			χ^2
			only residents	sharing with neighbors	partial sharing of common space with neighbors	
Gender	Male	66(28.2)	82(35.0)	86(36.8)	234(100.0)	8.87*
	Female	77(28.9)	63(23.7)	126(47.4)	266(100.0)	
	Total	143(28.6)	145(29.0)	212(42.4)	500(100.0)	
Old age expected income	less than 1 mil won	15(21.4)	23(32.9)	32(45.7)	70(100.0)	16.55*
	1~2 mil won	48(24.5)	61(31.1)	87(44.4)	196(100.0)	
	2~3 mil won	37(28.2)	37(28.2)	57(43.5)	131(100.0)	
	3~4 mil won	21(36.2)	18(31.0)	19(32.8)	58(100.0)	
	more than 4mil won	22(48.9)	6(13.3)	17(37.8)	45(100.0)	
	Total	143(28.6)	145(29.0)	212(42.4)	500(100.0)	

* p<.05

<Table 6> Preference for Usage Method of Common Space

	Type	Frequency(%)
Common Space Use	Limited space exclusively for the residents	142(28.4)
	Expanded space use plan to be shared with the neighbors	145(29.0)
	A part of space to be shared with the neighbors	212(42.4)
Entrance Method	Taking of the shoes at the overall entrance point	122(24.4)
	Taking off the shoes at an individual's entrance point	378(75.6)
Balcony Activities	Suntan	55(11.0)
	Growing plants and flowers	306(61.2)
	Drinking coffee or tea	101(20.2)
	Laundry and drying	30(6.0)
	Others	8(1.6)

citizens as a connection of internal life and external activities are being emphasized (Lee Kwan Yong, 2003).

In order to plan a garden in future senior congregate housing arrangements, the necessity level of activities desired in gardens was surveyed. Walking accounted for the largest proportion with 3.73 points, followed by light exercise or games (3.58), growing plants or vegetables (3.55), chatting with neighbors (3.54), sunbathing (3.28) and outdoor dining (3.08). Therefore, it is recommended to plan a space for walking, and if space allows, allocate some space for light exercise and games, growing plants and vegetables, and chatting with neighbors.

4. Types of Behavior in Common Spaces

The preference on the types of behavior in common space was surveyed by the usage method of laundering, drying and dining at the common cafeteria.

1) Laundry method

For the preference of the laundry method, combining hand laundry with washing machine (55.8%) accounted for the largest proportion, followed by all laundry to be done by washing machine (39.2%) and usually hand laundry (2.6%), showing that most preferred using the washing machine. However, as the preference for a

<Table 7> Importance Degree of Activity in a Garden

Activity in a Garden	Average
Walking	3.73
Light exercise or games	3.58
Growing plants or vegetables	3.55
Chatting with neighbors	3.54
Suntanning	3.28
Outdoor Dining (barbecue)	3.08
Total Average	3.46

combination of hand washing and machine washing accounted for more than 55%, a space should be provided next to the washing machine to enable hand washing. As this laundry method is specific to Korea, there should be a specific design plan on this issue.

2) Drying Method

For the preference of the drying method, hanging clothes, out to dry naturally (69.2%) accounted for the largest proportion, followed by using, a drying machine (30.8%). This view differs from US senior citizens who believe the common laundry room is consisted of washing and drying machines, while in Korea, there have been numerous studies for planning to install a drying rack in the individual space. This is a specific characteristic of Korea and designs to combine such natural drying methods need to be considered.

3) Dining Method in the Common Cafeteria

Assuming that meals will be taken in the cafeteria at senior congregate housing, the preference on the dining

method was surveyed. Dining at the table accounted for 77.8% and dining by sitting on the floor accounted for 22.2%, showing a similar preference as dining in an individual space.

5. Planning Elements of Senior Congregate Housing

An important factor in the planning of senior congregate housing is protecting the privacy of senior individuals while offering them a social environment to provide psychological stability. The importance level of planning elements, to be considered in designing such senior congregate housing, of pre-senior citizens were identified. These eight planning elements were selected, along with planning elements which preceding researches (Lawton; 1980, Regnier & Pynoos; 1992, Kim Hea Jung; 2000, Lee Kwan-Yong; 2003) proposed. Pre-senior citizens regard safe living as the most important factor, indicating that safety concepts must be applied from the beginning of the planning phase. That the space must be planned aesthetically also received high marks. This indicates that various design alternatives to reflect the aesthetic concept in addition to the functional aspects and reducing loneliness will be needed.

In particular, the importance of designing a beautiful space is more emphasized, therefore instead of merely emphasizing functional aspects or reducing loneliness aspects, various design plans reflecting these aesthetic aspects should be considered for the planning of senior

<Table 8> Preference for Types of Behavior in Common Space

	Type	Frequency (%)
Laundry	All laundry by the washing machine	196(39.2)
	Some laundry by the washing machine	279(55.8)
	Mostly hand washing	13(2.6)
	Others	12(2.4)
Drying	Using the dryer	154(30.8)
	Natural drying	346(69.2)
Eating	Sitting on the floor	111(22.2)
	Sitting on a chair	389(77.8)

congregate housing.

In terms of the planning elements of senior congregate housing, according to the social, demographic and economic variables, there were differences in groups by gender and occupation. That is to say, for gender, there was a significant difference from an economical viewpoint. Women valued designs imposing less of an economic burden than men. Furthermore, there was a significant difference on the concept of beautiful space and design giving a sense of belonging according to occupation. Pre-senior citizens working in sales and service sector valued more designs of beauty and reducing the sense of loneliness than citizens working in administrative sectors.

On the related variables of the characteristics of residence, there was a difference between groups according to residence type, size and area <Table10>. By residence type, there was a significant difference on the valuing of design to feel the ego-identity among residents living in a house and living in row house/other commercial buildings. A house is an ideal type of residence that gives a sense of nostalgia more than row house/other commercial buildings, therefore, citizens who had lived in a house valued ego-identity more. By residence size, there was a significant difference in the concept of assisting in Activities of daily life and the concept of beautiful design. Citizens who had lived in houses of more than 40 pyung and

who had lived in less than 20 pyung showed a large difference in the value of assisting with daily life and elements of beautiful design. By residential area, there was a significant difference in ego-identity, diversity and beautiful design concept. In terms of planning concept, the residence size was a semantic variable to assist the daily life and for ego-identity, the residence type and area were semantic variables, for diversity, residential area, for reducing the sense of loneliness, occupation, for economical efficiency, gender, for design, occupation, residence size and area were the semantic variables. Therefore these planning concepts generally have an important significance on the specific development of the senior congregate housing, and an interior design model to correspond the characteristics of residents can be developed by referring to the related variables surveyed in this study.

IV. Conclusions

The objective of this study is to analyze the preference of spatial elements for common space planning in senior congregate housing to be used as a basic set of data to plan senior congregate housing suitable to the Korean environment. The result and proposals are as follows.

First, the medical treatment room, exercise room, garden and activities room must be planned as a part of the common space of the senior citizen group housing. As most people preferred the concentrated arrangement of such spaces, it will be better to locate all of them near the main entrance point.

Second, as pre-senior citizens of Korea prefer to share the common space with the neighbors, the way to make it available to area residents or have the residents use the area facilities must be considered for effective maintenance and management.

Third, the balcony provides various activities in individual space and connects the indoor with the outdoor space, thereby forming a neighborhood community. Therefore, the design of balcony is

<Table 9> Importance of Planning Elements

Planning Elements	Importance (Average)
Support for Safe Living	3.80
Feeling at Home	3.68
Reduced Isolation and Loneliness, Vested Togetherness	3.68
Economically Modest Design	3.61
Appearance of the Space	3.58
Independent Support of Daily Lives	3.55
Satisfaction of Diversity of the Residents	3.54
Self Identification	3.28
Overall Average	3.59

<Table10> Differences in Preference for Planning Elements of Senior Congregate Housing by Related Variables

planning elements related variables	Independent Support of Daily Lives		Support for the Safe Living		Self Identification		Feeling at Home		Satisfaction of Diversity of the Residents		Reduced Isolation and Loneliness		Economically Modest Design		Appearance of the Space	
	M(SD)	Scheffé	M(SD)	Scheffé	M(SD)	Scheffé	M(SD)	Scheffé	M(SD)	Scheffé	M(SD)	Scheffé	M(SD)	Scheffé	M(SD)	Scheffé
Gender	Male	3.56(.56)	3.80(.42)	3.26(.76)	3.68(.54)	3.52(.59)	3.64(.55)	3.53(.66)	3.62(.56)	3.60(.56)	3.70(.48)	3.53(.60)			3.53(.60)	
	Female	3.55(.59)	3.79(.45)	3.30(.71)	3.68(.53)	3.56(.58)	3.71(.54)	3.68(.54)	3.62(.56)	3.70(.48)	3.44(.65)	3.62(.55)			3.62(.55)	
Occupation	t	.057(n.s)	.151(n.s)	-670(n.s)	-.020(n.s)	-669(n.s)	-1.50(n.s)	-2.78*	-1.50(n.s)	-1.69(n.s)						
	Housewife	3.55(.63)	3.79(.45)	3.31(.75)	3.67(.58)	3.59(.58)	3.72(.56)	3.62(.56)	3.60(.56)	3.70(.48)	3.44(.65)	3.62(.56)			3.60(.56)	AB
	Service affairs	3.65(.52)	3.91(.29)	3.41(.69)	3.78(.42)	3.63(.54)	3.79(.44)	3.69(.51)	3.70(.48)	3.44(.65)	3.58(.56)	3.62(.56)			3.70(.48)	B
	profession	3.55(.62)	3.72(.51)	3.18(.72)	3.67(.58)	3.47(.60)	3.51(.65)	3.49(.72)	3.44(.65)	3.58(.56)	3.52(.61)	3.69(.56)			3.44(.65)	A
	etc.	3.54(.53)	3.82(.43)	3.20(.75)	3.54(.61)	3.55(.61)	3.63(.52)	3.49(.66)	3.58(.56)	3.52(.61)	3.52(.61)	3.69(.56)			3.58(.56)	AB
Residence Type	F	1.91(n.s)	3.71(n.s)	1.79(n.s)	2.26(n.s)	2.41(n.s)	4.49*	2.67(n.s)	3.30*						3.30*	
	detached apartment	3.58(.58)	3.85(.37)	3.38(.70)	3.73(.49)	3.60(.58)	3.72(.56)	3.66(.59)	3.60(.58)	3.66(.59)	3.60(.58)	3.72(.56)			3.60(.58)	
	rowhouse	3.54(.59)	3.78(.46)	3.27(.75)	3.65(.56)	3.54(.59)	3.66(.55)	3.61(.59)	3.54(.59)	3.61(.59)	3.57(.58)	3.66(.55)			3.57(.58)	
	F	.27(n.s)	2.50(n.s)	3.26*	1.34(n.s)	2.14(n.s)	.59(n.s)	2.46(n.s)	.41(n.s)						.41(n.s)	
Residence Size	Less than 20py	3.33(.61)	3.70(.47)	3.27(.78)	3.63(.56)	3.43(.50)	3.70(.47)	3.53(.68)	3.40(.56)	3.40(.56)	3.40(.56)	3.70(.47)			3.40(.56)	A
	20-30pyung	3.53(.58)	3.79(.44)	3.19(.75)	3.67(.55)	3.50(.60)	3.67(.56)	3.59(.60)	3.52(.60)	3.52(.60)	3.52(.60)	3.67(.56)			3.52(.60)	AB
	30-40pyung	3.58(.58)	3.78(.46)	3.35(.70)	3.69(.54)	3.56(.59)	3.66(.56)	3.62(.60)	3.64(.54)	3.64(.54)	3.64(.54)	3.66(.56)			3.64(.54)	AB
	more than 40py	3.68(.52)	3.88(.37)	3.44(.66)	3.73(.47)	3.68(.52)	3.76(.49)	3.67(.58)	3.68(.52)	3.68(.52)	3.68(.52)	3.76(.49)			3.68(.52)	B
Residing Area	F	2.95*	1.47(n.s)	2.89(n.s)	.39(n.s)	2.25(n.s)	.68(n.s)	.52(n.s)	3.15*						3.15*	
	Gangnam	3.55(.58)	3.79(.46)	3.38(.70)	3.69(.51)	3.61(.56)	3.73(.46)	3.63(.59)	3.65(.52)	3.65(.52)	3.65(.52)	3.73(.46)			3.65(.52)	
	Gangbuk	3.56(.57)	3.80(.42)	3.22(.74)	3.67(.55)	3.49(.59)	3.64(.59)	3.59(.61)	3.53(.68)	3.53(.68)	3.53(.68)	3.64(.59)			3.53(.60)	
t	-23(n.s)	-.33(n.s)	2.58*	.50(n.s)	2.27*	1.83(n.s)	.75(n.s)	2.48*						2.48*		

*p<.05

significant in planning senior congregate housing. Also, the garden is an important element that must be included in the public senior citizen housing since it is the space in which various recreational and social activities occur. It should be arranged to accommodate the residents' preferred activities which were taking a walk, light exercise or games and planting in the order of preference.

Fourth, In designing senior congregate housing, safety, intimacy, and attachment are decisive planning concepts. Other important concepts to be included are economic, aesthetics, diversity, and self-identity factors.

Fifth, gender, income and the size of current residential space were variables that showed the difference to the common space planning elements. Specifically, depending on the income, two types of models: high-quality type and practical type, are both required for development and supply. Therefore, the interior design models must be developed in response to the residents' characteristics.

This study has significance in suggesting empirical data for development of senior congregate housing by analyzing preference trends of pre-seniors on planning factors of common space. Studies will further need to address planning factors of individual space, finishing materials, and color.

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