



Comparison of Preferred Features in Spatial Composition for Shared Housing between Rural and Urban Elderly

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ABSTRACT

Shared housing for elderly people, where several elderly people live together, gains attention as a means to prevent the lonely death of elderly people and continuously maintain their social relations. The purpose of this study is to compare the characteristics planned through rural and urban areas-residing elderly people's participation in the shared housing spatial composition by area. This study conducted a small scale workshop panel method that targeted small group, but through which extensive information can be acquired, as a qualitative method. This study targeted 16 elderly people aged 65 and over living in rented apartments in rural and urban areas by dividing them two groups by area, namely into four groups. A total of 12 workshop sessions were held with three sessions at a time through a certain time interval.

As a result of the study, the elderly people showed positive responses to the shared housing, irrelevant of area. As time went on, the workshop panel method's effect was revealed through consolidated positive attitude and agreement of different opinions. The shared housing for elderly people is valuable as a residential alternative for elderly people, and differentiated supply of the shared housing for elderly people, according to residential area's characteristics, is suggested.

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1. Introduction

1.1. Background and necessity of research

The speed of increasing of the elderly population in Korea is the fastest among 34 member countries of OECD and has now reached the highest level among OECD countries beating Japan that entered super-aged society for the first time in the world in 2003(Huh, M.G. et al, 2014). In the aging rate by region, rural area shows higher rate than urban area and there is already regions that entered super-aged society(National Statistical Office, 2014). Likewise, since not enough preparation is done for rapid aging, it is expected there will be many problems individually and socially especially those typical problem patterns of elderly depression, suicide and lonely death shown because of social isolation of elders(Yoon, M.S., 2013). This is becoming more threatening to the society in the situation where single elderly household composed of 1 or 2 elderly people increase. With this, economic vulnerability

of elderly especially the fact that elderly people feel much burden regarding housing expenses is an important problem of the elderly¹⁾, further, another big problem is that there is deficient care labor who can take care of those while aging population that needs the service is increasing. As a way to solve these multidimensional problematic situations, 'Elderly Shared Housing which several elderly persons living together is being highlighted as a housing alternative.

In the rural area where aging rate is seriously high already, 'Elderly Shared Living Home' and 'Group Home' are implemented with local government being the center and trying to expand these together with central government supplying financial support. However, this system is only a temporary alternative measure done urgently in the process of problem solution related to increasing number of single elderly households and has a problem in that it causes conflict between residents and non-residents by using senior citizen center or village hall which are joint property of towns and that it does not guarantee independent, private space for residents. Thus for Korea seriously experiencing aging

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1) According to Report on the Aged in 2011, the expenditure items that can burden elders are housing cost(43.0%), health expenditure(24.7%), food cost(12.0%) and we can know they feel much more burden from housing cost compared to other items. We can know rural area(48.3%) has much more burden in housing cost than urban area(40.5%) if we take a look at regional analysis.

phenomenon these housing types are needed to be developed and improved as elderly housing alternative and further, there is a need for housing development understanding regional features, difference in lifestyle, serious difference in aging rate. But there is also a limitation that these new elderly housing types cannot be understood properly with prior survey research method because of the lack of understanding since the research regarding these are still in initial stage despite of the much various possibility in architectural way as new housing alternative. Therefore more exploratory research is needed to be done.

1.2. Purpose and importance of research

The objective of this research is to compare the preference features in spatial composition of the elderly shared housing by area, which the rural and urban elderly planned by direct participation.

This research focused on what phenomenon and main points can be expressed in the process of expression understanding exactly the demand intrinsic in elderly rather than generalizing the elderly preference with its characteristics lying in exploratory research. For this objective, small group workshop panel method is used. This research method has its premise in small group one and the workshop values the process that participants recognize the new topic. And the panel method let same participants participate many times and understand specific subject comprehensively and their gradual responsive changes. Due to these exploratory research features, more in-depth qualitative researches and more structural qualitative researches can be reached as well as performing a role of bridge toward questionnaire survey and other various quantitative researches. Besides, in the modern society where customized housing welfare and appropriate technology are emphasized, it can be said it is a timely research method in that it induces the result through participating group rather than generalizing by pulling intrinsic desire of participating residents. The specific research problems in this research are as follows.

<Research problem 1> How is the response for the elderly shared housing of elderly groups residing in public rental apartment by rural and urban area?

<Research problem 2> How is the preference for the spatial composition of elderly shared housing of elderly groups residing in public rental apartment by rural and urban area?

<Research problem 3> How is the evaluation for the small group workshop panel method of elderly groups residing in public rental apartment by rural and urban area?

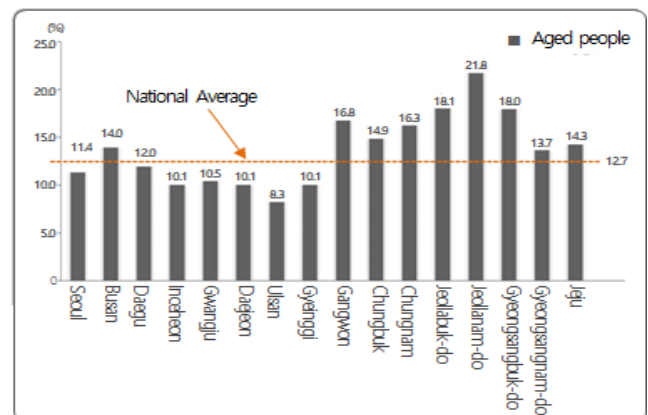
2. Literature Review

2.1. Features of rural and urban elderly

It is unquestionable that rural elderly has an overall low quality of life and is put in unfavorable economic and social conditions compared to urban elderly, nevertheless, there is a big possibility that the community features can act in positive social context in routine preventing the isolation of elderly for community culture still remains based on long-time relation network between members of local society in rural area compared to the urban area where anonymity is one feature(Han, G.H., 2005). Likewise, urban and rural area have basic group feature difference. More specifically, if we intend to examine them by features of housing environment and socio-demographical features, followings are results.

1) Socio-demographical features of urban and rural elderly

First, Korea is experiencing the most fast aging rate among member countries of OECD and the speed is so fast that we enter aging society starting from 2018(Huh, M.G. et al, 2004). However this shows the aging population ratio regarding the total population in Korea and we can see the difference in aging ratio by region from following <Figure 1>.



Source: Statistical Report on the Aged, National Statistical Office(NSO)

Fig 1. Proportion of elderly population according to region

The percentage of the elderly population of Seoul, the capital city and representative city of Korea is 11.4% but the provincial areas such as Jeonnam(21.8%), Jeonbuk(18.1%), Gyeongbuk(18.0%), Gangwon (16.8%), Chungnam(16.3%) and Chungbuk(14.9%) already entered the super aged society outrunning the aged society. However not only absolute number of elderly population and its percentage increase but also the number of the single or couple elderly households only consisting of 1, 2 elderly persons increases due to change of population composition²⁾. This changes are phenomena shown in both urban and rural area and it is expected that social cost such as sustenance allowance for elderly will be increased together with the occurrence of

2) Urban areas show 10.9% in 1994, 17.6% in 2011 with agricultural and fishing area having increased ratio from 17.1% in 1994 to 23.9% in 2011. From the changes of past 18 years, we can see that the ratio of elderly couple household and single elderly household have increased both regardless of regions(Lee, Y.K, 2014).

social problems such as elderly lonely death as single elderly household increases.

Elderly in Korea has low income level compared to general household and 49% of them experience elderly poverty problem which is four times higher than OECD average 13%. It was also shown that rural elderly has a high employment rate compared to urban elderly but with a low income level(Jung, K.H. et al, 2011) implying the fact that the employment does not always guarantee an appropriate income level, and in overall the rural elderly are economically quite weak than the urban elderly³⁾.

2) Features of housing environment in rural and urban elderly

With elderly's economic vulnerability, poor housing environment is a big problem, too. Although the home ownership rate of elderly is high ⁴⁾ most of the house they live are deteriorated, and they don't have economic capacity to renovate or repair the house even if the environment is not suitable for elderly, they are exposed continually to the poor housing environment for they want to live in the place where they live now(Jung, K.H. et al, 2011). From shortfall household of minimum housing standard by region, we can see that rural housing level is poor for rural area has higher ratio (9.7%) than urban area(Choi, B.S. et al, 2013). In addition, the rate of the houses which lacks the minimum residential standard shows that 14.5% of rural elderly households and 9% of the urban elderly households are living under the environment poorer than the minimal standard. Especially, the rate was much higher than 10.6%, the average rate of the nation that the residential level of rural area is quite weak (Kim, D.Y., 2013).

Likewise there is a regional difference according to the regions of urban and rural area. Especially urban is favorable for various benefits and proper housing environment are provided with infrastructure concentrating in the city while rural area is not. However preparing housing alternatives for elderly is very important in the situation where personal and social burden toward them is increasing and where elderly housing environment is poor. Conducting an exploratory research regarding rural and urban area with different features in this process is seen useful for it can create comparable new perspective regarding two groups.

3) Prior researches regarding housing environment of rural and urban area

The space for elderly should provide environment that can

support physical malfunction of elderly by applying universal design and barrier-free design basically. To examine this more specifically, this research examined the prior researches on elderly housing environment by classifying rural and urban areas. As a result, most of researches targeted urban elderly. They can be classified into researches such as preference on elderly housing alternative types(Lee, Y.S. et al, 2007a, Park, H.Y. et al, 2011), preference on space planning element(Hong, H.O. et al, 1999, Lee, G.S. et al, 2009), house renovation(Kim, Y.J., 2006) in urban area. And there are house renovation(Kim, Y.C. et al, 2010), way to utilize empty house(Choi, S.M. et al, 2002, Lee, C.W. et al, 2013, Hwang, J.I. et al, 2012), standard blueprint (Hwang, Y.W. et al, 2011, Lee, J.W., 2011, Lee, U.K. et al, 2011), space plan in the unit of town(Seo, J.H., 2013, Kim, H.R. et al, 2012) in the rural area. Researches mentioned above conducted both in urban and rural area each and emphasized housing environment suitable for each regional features should be provided. Compared to this, Choi, M.K.(2004) surveyed the overall awareness of elderly housing environment targeting rural and urban elderly and showed difference in region depending on the items of elderly housing types preferred, awareness of housing matters, residing reason, reason of unsatisfaction about current house as results.

Putting them together, urban elderly resided in current house continuously due to the convenience of house and burden regarding moving although the satisfaction regarding the house itself is not that high for the reason of air pollution, noise, low maintenance level, too much housing expense and showed high preference toward house that provides service⁵⁾. Rural elderly had unsatisfactory elements such as inconvenience upon usage of public facility, low maintenance level of house but did not want to move out for they are attached to the house and surrounding environment and want to live even in the future after furnishing elderly support facility in current house rather than moving out to the house that provides service. This research has its meaning in that it is a comparison research targeting rural and urban area and clarified that there can be difference in house preference according to the region through this.

Although there are numerous researches implying that approach should be different toward urban and rural area, house space plan especially the research example targeting elderly is not being done so there is the need for various researches such as exploratory research, correlation analysis, experimental research clarifying these parts in the future conducted afterwards.

2.2. Understanding of elderly shared housing

3) The employment ratio of elderly in our nation by region is rural area 55.2%, urban area 23.2% showing that more than half of rural elderly work. But yearly income by region shows more income in urban area (2,3964 thousand won/month, 1997 thousand won) than rural area(1,6637 thousand won, 1386 thousand won) with monthly average 611 thousand won(Jung, K.H. et al, 2011).

4) On the basis of 2000, house owning ratio of elderly household is 76.3% higher than that of general household 54.4% and that of rural area is much higher with 90.6% than urban area with 66.6%(Park, S.Y. et al 2006).

5) Service housing mentioned in the research of Choi, M.K.(2004) refers to the elderly house accompanied with care responding to the features of elderly and the service in this research includes various leisure support service for elderly along with these concepts.

1) Concept and features of elderly shared housing

Elderly shares housing is one of elderly house types in a narrow sense and refers to so called shared housing which the residents share the space in a small group house, and refers to all types of houses which have a space the residents may share while each individual has its own independent space unit in a broad sense(Lee, Y.S., 2014)⁶⁾. The difference between the narrow sense and broad sense is that the former allows the individual to use a part of space instead of an independent residential unit while the latter has the independent residential unit for the individual including the space of various functions.

The previous studies which mentioned about the type of such elderly shared group house were carried out by Lee, Y.S., Oh, C.O.(1993), Choi, S.J.(1998) and Hong, H.O.(1999), especially, Lee, Y.S. et al(2007b) clarified the terms which were used as many meanings and defined them in viewpoint of residential aspects and architectural characteristics. Among the concepts they organized, elderly shared housing was classified into independent period and dependent period. House types for independent elderly are Shared housing, Congregate housing, Accessory housing in narrow meaning and types of housing for dependent elderly are Assisted living, Sheltered housing, Sheltered congregate housing. They are expressed as different terms each other but ultimately mean the houses where residents jointly use the house and are supported various services.. The scope of the service is provided widely from the type that simply provides the administrator providing close service for 24 hours(Weal Francis, 1993), simple livelihood supporting service needed for elderly to medical service(Kwon, S.J., 2001). Thus considering the fact that most of elderly might want to enter elderly shared housing when they need help their demand should be dealt(Seo, Y.M. et al, 2004), and considering these demands and that most of elderly might demand the service in near future, housing alternative that can actively deal with their demand is needed.

The elderly shared group housing used in this paper refers to a housing type where several elderly live under the same roof but each individual has its own independent space and jointly uses the living room, kitchen and dining room. This is a concept in wide meaning including these concepts all. In this case, the independent space includes the type where all functions such as kitchen, dining room, living room and bath room from the sleeping room only. In addition, since the service for the elderly is supported, it may support the independent life of the elderly.

These elderly shared housing has a possibility of living cost reduction because of shared space, profit creation through co-production, rental business in the case of house owner with

many effects in social and economic aspect relieving the social stress for the elderly sustenance. Finally, shared living reduces stress from living alone and has an effect of increasing comradeship in people living together(Oh, C.O., 2008; Day-Lower, 1983 re-citation). Likewise, elderly shared housing can be seen as a type of sustainable housing not only saves resources by sharing space partially but also delays the phenomena of decreasing sociality durability due to rapid aging.

2) Prior researches of elderly shared housing

As a result of examining prior researches on houses in the scope of elderly shared housing, attitude and preference research, policy related research, foreign case studies, space planning research were classified and following <Table 1> is made for example with the researches after 2000.

Table 1. Precedent research related to Elderly Shared Housing

Subject	Preceding research
Preference	Hong, H-O, & Yoo, B-S(2003), Hong, H-O(2001), Hong, H-O, & Jee, E-Y(2004), Kim, Y-H, & Hong, H-O(2005), Lee, J-H, Lee, Y-S, & Lee, S-J(2007), Lee, Y-S, Lim, C-S, Lee, Y-G, & Hwang, G-Y(2009) Seo, E-M, & Hong, H-O(2005), Yoo, B-S, & Hong, H-O(2005)
Policy	Yoo, B-S, & Hong, H-O(2005)
Case study	Hong, H-O(2001), Yoo, B-S, & Hong, H-O(2005),
Planning Space	Hong, Y-K, & Oh, H-K(2005), Yeom, H-S(2014), Seo, Y-Y, Hong, Y-K, & Oh, H-K(2005), Yoo, B-S, Hong, Y-K, & Oh, H-K(2005)

As a result, research related to space planning utilized the questionnaire survey and grasped the preference and demand for space planning of the elderly shared housing. Among them, research result related to space planning showed that most people recognized the need for elderly shared housing positively but expressed stress regarding shared living and preferred to have supplied the private space different in size according to the single household (11-15pyeong), couple household(21-25pyeong) along with separate form of bedroom rather than studio type. (Hong, I.K. et al, 2005a, Yu. B.S. et al, 2005). Further, types of elderly shared housing was categorized according to these results and development direction was proposed at the back ground of these(Lee, J.H., 2007, Yeom, H.S., 2014). But these researches mainly target urban and seldom deals with elderly shared housing in rural area.

3) Similar concept cases of elderly shared housing

Elderly shared housing is supplied in various forms in European countries and Japan where experienced aging society already and is operated in the form of group home in the nation targeting

6) Lee, Y.S.(2014.11) proposed Korean housing welfare model for social vulnerable class in housing environment improvement technology development research and policy basis construction for Ministry of Land and Infrastructure and Transport R&D task 'housing welfare embodiment and shared housing here is interpreted as housing types in wide meaning and defined including assisted living, group home, supportive housing, collective housing, co-housing.

economically vulnerable or physically not healthy elderly in most chances(Lee, Y.S. et al, 2009). Recently, 'shared living home' in domestic rural area and 'living together' business in Youngdeungpo are similar examples to this. First, rural shared living household is operated to provide pleasant housing environment and prevent elderly lonely death in rural area and is a system that enables many elderly to live by renovating town hall or senior citizen center. Together with economic support like renovation cost, livelihood cost, operation cost, various services related with local community is provided. This business is really helpful for rural elderly by reducing the burden of heating bills in the winter especially as well as being effective in decreasing elderly lonely death and elderly depression⁷⁾. And 'Living together' business of Youngdeungpo is a business that enables elderly to live depending on each other forming bond of sympathy as well as network with elderly in similar situation through an activity that cares single elderly who cannot move well and depression prevention through friendship promotion with members by forming self-help meeting (so-called farmer's cooperative group). (Press release of Youngdeungpo ward office, 2014). This business does not provide housing space to live with but can be said to be important in the aspect that it provided opportunity to interact with each other after forming network between single elderly. This is the same context in the aspect that continuous social interaction is possible through community life in elderly shared housing.

Likewise, elderly shared housing has its advantages in that it can overcome the vulnerable economic situation of elderly in the aspect that it can minimize the space by individual unit as well as using the space effectively by using joint space with each residential unit of many residents. Additionally, it also has a potential to solve or relieve the social problems such as elderly lonely death in the point that it can premise the social interaction between residents.

2.3. Prior researches utilizing panel method of small group workshop

1) Concept and features of small group workshop panel method

Workshop refers to the action that exchanges new knowledge, technology, insight method regarding a certain problem or task with each other(Naver Dictionary). Workshop is a concept developed at the background of experience-centered education in the field of pedagogy and has a feature valuing the bidirectional and multidirectional process showing intrinsic power such as knowledge and experience of each other through the process of

asking and discussing with participants being main characters. (Matso Dadas et al, 2006). And small group is the most effective for active discussion and participation. And the panel survey is the method of conducting repeated survey at a certain time interval targeting same specimen. Time intervals are various enough to reach years from hours or minutes at minimum(Jung, K.H. et al, 2011) and panel survey in public sections in the nation are approximately 17 kinds done mainly in social field such as education, labor, female, medicine and there are labor panel, young man panel, aging research panel(Nam, G.S., n,d).

Small group workshop panel method is a method used to collect common opinion of groups by letting participants discuss and clarify the demand, problems and solutions after gathering the group composed of a few individuals. Through this in-dept and collective information can be disclosed and by reorganizing the demand of individual through interaction of group and comparison, examination, it can be said to be residents-participation type data collection method that can comprehend more precise demand with more stable data(Lee, Y.S. et al, 1997). We can grow critical view regarding given problems and improve communication skills with people through this(Cho, J.H., Choi, J.S., 2010). The difference between this method and questionnaire or interview is that common perception and demand are exposed beyond individual scope as mutual awareness, demand, information between group members are interacted. Thus, opportunities to find integrative solutions that cannot be obtained by individuals can be gained through discussion process(Lim, J.E., 2006)

Workshop has been utilized with various tools developed according to the topics in order to promote active participation of investigation targets. Participation tools in the process of space planning were analog tools such as sketch, pictogram picture and space image, model but as technology develops, GIS, 3D digital model, virtual reality are introduced supporting higher dimensional participation design(Jung, E.J et al, 2012). Especially it can be said to have developed more actively in the process of finding solutions for effective communication in modern society where the concept of residents participation is valued. This participation design tool induces the participation of participants naturally and should be developed into flexible tool easy to use and understand for ordinary people who are non-expert to enable reasonable discussion(Song, E.A., 2009).

2) Prior research of small group workshop panel method

There are many researches including Lee, Y.S et al(1993, 1994 a, 1994b, 1994c, 1997, 2009, 2010), Ko, Y.H.(1993), Yoon, M.K(1993), Kim, S.A. et al(2004), Lim, J.E.(2006), Cho, J.H. et al(2010), Lim, S.H. et al(2010), Lee, J.I. et al(2011a, 2011b), Lee, J.I.(2013), Jung, Y.J.(2013) and others that used small group

7) According to KREI(Korea Rural Economic Institute), heating bills of rural area is 600 thousand won monthly on average, 3 times higher than urban area and living conditions are very poor because skipping meal ratio a day is 7.9%, the household without proper shower facility and toilet takes 7.7%. Besides, at least 500-1000 people are estimated to die because of loneliness in a year.

workshop panel method in the researches related to housing environment. This research verified the usefulness of this research method by utilizing small group workshop panel method to the tasks that need social agreement induction and to the response of residents changing according to the time and information after acquiring massive amount of information that cannot be found in quantitative research method such as survey.

3. Research method

3.1. Introduction of research method

The research method of this research is small group workshop panel. The target of investigation was 16 elderly over 65 residing in leased apartment in urban and rural areas. Urban area is limited to Seoul, capital and the largest city in Korea, and rural area targeted suburban region where public rental apartments are placed. Total 4 groups are made of each 2 groups according to the region of residence and total 12 times of workshop was done over 3 times at time interval more than a day to each group. To increase the accuracy and reliability of workshop data, the process was recorded through voice recording and picture taking. This is organized in <Table 2> like following.

Table 2. Research methodology outline

Item	Contents
Subject	Elderly people aged 65 and over residing in rural and urban rented apartments for low-income bracket
Period	October 7 – November 1, 2014
Frequency	3 times per each group for 4 groups (total 12 times)
Time	1.5 – 2 hours per workshop
Place	Senior citizens' center of apartment, participants' housing

3.2. Selection of participants

The participants of this research were organized into total 4 groups composed of each two group who are over 65 elderly residing in leased apartments in rural and urban area according to the region. The participants were also limited to the elderly who are living in the apartment considering that the elderly shared housing in this paper and the general apartment which is normally understood as the shared house do not have the same meaning but several persons live together under one roof and the residents have community activities each other such that the participants were expected to have a high understanding on the elderly share housing. And control other variables excluding regional difference was done was done targeting the people living in public rental apartments in relatively similar economic situation in the aspect of rental house supplied from public such as LH(agricultural area) or SH(urban area) and physical environment of apartment.

The size of the workshop group varies according to the topic or situation but the most desirable number of members for enough discussion and every opinion collection is 3-7(Ko, Y.H., 1993). However, considering that it targets elderly and the difficulty in gathering targets who can do it for 2 hours 3 times consecutively, the number of investigation target was set as 3-5⁸⁾.

3.3. Progress plan and analysis procedure of the workshop by step

1) Progress plan by step

This workshop was planned to be conducted in three times by groups. The 1st workshop is a stage that rapport formation is important thus preference was understood regarding overall elderly housing types⁹⁾ not limiting to shared house and daily stories like current housing situations were naturally induced. Through this, we intended to find out the level of preference regarding shared type housing in whole elderly housing types. 2nd workshop is plan to the space directly by the participants. It can be said to be the stage with one educational function that enables more precise preference of individuals and mutual group utilizing this tool here¹⁰⁾. Finally, 3rd workshop is to understand the final preference of the participants through checking the initial floor plan based on the agreement of the group set forth by the 2nd workshop.

Researcher induced natural response from participants by forming comfortable atmosphere and especially helped induce agreements through discussion after providing the opportunity to think upon hearing each other's opinions by individual space composition in 2nd workshop and conducting the presentation regarding this. Besides, to help participants understand on their own, information was provided continuously at the proper point or providing extra information and questions that can awaken the parts that participants miss in conflict situation.

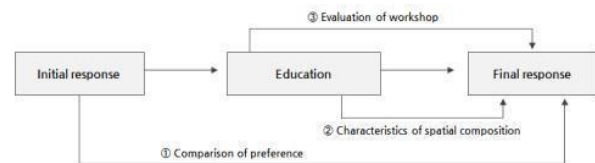


Fig. 2. Plan of workshop process

8) Reduced the number of personnel considering time delay because it's difficult to stop the speaking of the elderly due to the reason of establishing the rapport.
 9) 8 types of the elderly houses developed by Lee, Y.S.(1993) in 「Korean Elderly Houses」 include ① Detached house, ② Apartment, ③ Detached hous with separate buildings ④ Multi-household shared house ⑤ Villa type row house ⑥ Welfare house for the elderly ⑦ Nursing home ⑧ Community for the retired. This research used them classifying to general house (①, ③, ⑤) and shared type housing(rest). The copyright for the visual data of those houses belongs to Millenium Environment Design Institute and subject to be in legal liability if use them without prior written consent.
 10) The whole processes of workshop are the education but the 2nd workshop of <Fig 2> is the step after and before the 1st and 3rd workshop and is the most essential so, was expressed as education.

The summary of main points in these workshop process is shown in <Figure 2>.

That is to say, final preference of elderly shared housing was understood by comparing preference in the final workshop and initial preference in elderly housing types before providing information through workshop(①). This is to reveal the usefulness of this research method seen through comparison of initial response with the intention to understand more precise and stable preference through workshop being core. Second, understanding features of space composition(②) tried to understand the features of preferred space composition finally and ultimately through the process of re-confirming their preference using floor plan, space composition preference agreed in each group, individual space composition preference and examined additional changes shown in conclusion process of agreements. Third, the effect of workshop was to understand the main effect of workshop by examining the process of agreements conclusion regarding how educations such as regular opinion exchange, information transfer in second stage were reflected in the final result.

2) Research tools by step



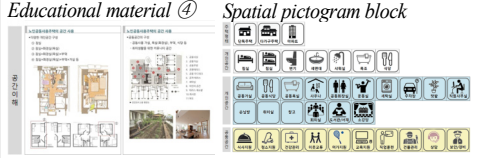
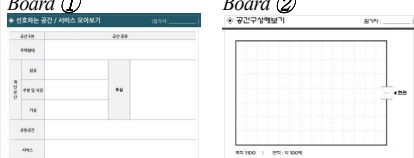

<Table 3> shows the summary of used research tool in workshop as well as organizing the workshop stages according to the objectives and contents.

Research tools used in this research are questionnaire, educational content, space-function pictogram block, space-extraction board(board①), space-placement board(board ②)and details are as follows.

The questionnaire were made in three types in total. One is for comprehending elderly housing types used in 1st workshop(questionnaire ①) and second is for understanding preference regarding elderly shared housing(questionnaire ②) and the third is for satisfaction survey of residents' participation tool in 3rd workshop(questionnaire ③)

Educational content was used in 1st and 2nd workshop. In 1st workshop, image data regarding 8 types of elderly housing that Lee, Y.S.(1993) organized for preference understanding about elderly housing types(educational content ①) and image data for information provision regarding social burden increase because of aging(educational content ②) were produced. And as the data for space understanding and the concept of elderly shared housing(educational content ③, ④), concept of elderly shared housing and its features, similar concept examples, individual/shared space composition method were put together. Further, pictogram block that visualized the function of each space and service was produced and made participants choose easily and easy space composition. And the board that organizes extracted preferred space and service(board ①) was produced in A3 size and

Table 3. Process of workshop

1 st Workshop	Objective	Grasping initial response toward Elderly Shared Housing
	Contents	Discussing the current housing environment (<i>Discussion</i>) Determining the preferred elderly housing type (<i>Educational material ①, ②, Questionnaire ①</i>) Understanding of ESH (<i>Educational material ③</i>) Identifying initial preferred space composition of ESH (<i>questionnaire ②</i>)
	Research tool	<i>Educational material ①</i> <i>Educational material ②</i>  <i>Educational material ③</i> 
2 nd Workshop	Objective	Finding out preferred space plan through participation
	Contents	Reviewing the 1 st workshop Understanding the space structure of Elderly Shared Housing (<i>Educational material ④</i>) Organizing the preferred space plan by individuals (<i>Spatial pictogram block, Board ①, ②</i>) Organizing the preferred space plan by groups (<i>Spatial pictogram block, Board ①, ②</i>)
	Research tool	<i>Educational material ④</i> <i>Spatial pictogram block</i>  <i>Board ①</i> <i>Board ②</i> 
3 rd Workshop	Objective	Finding out final response toward Elderly Shared Housing
	Contents	Confirm & evaluation of final plan based on result of 2 nd workshop (<i>Floor plan</i>) Evaluation workshop (<i>Discussion, questionnaire ③</i>)
	Research tool	<i>Floor plan-agreement</i> 

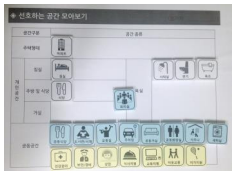

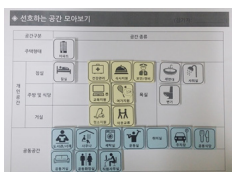


space composition board(board ②)was made in A4 size by downsizing the space of approximately 30m² to 1:100 scale.

Finally, researcher mapped the result of agreements of each group participants and showed the final opinion after checking the way of embodiment of participated elderly's opinions in visual space.

3) Concluding process of final agreements



Among the conclusions generated by each stage of workshop, the concluding process of final agreements regarding space composition are as follows to be specific. Specific space composition was done starting from 2nd workshop. Here, preferred space and service elements were extracted by individual and group and space placement was done on the basis of it. Here, wanted shared space and service elements were not limited in number and space placement was done in the premise that 5 households reside in current housing type situation(single, couple, single+couple) in the space of approximately 330m². The results in this stage is classified into individual result(①) and group result(②) them organized as <Table 4> utilizing one example as a representative.

Table 4. Sample of preferred space elements&arrangement

		① Preferred elements	② Space arrangement
Individual case example			
	Consensus Group arrangement	Rural	
Urban			

In 3rd workshop, group conclusion drawn in 2nd workshop(② of table 4) were mapped utilizing CAD and discussion took place regarding the problems or improvement measure through confirmation regarding this(① of table 5). Based on this, final floor plan was drawn(② of table 5) <Table 5> shows the summary of this.

Table 5. Final floor plan which reflected feedback respondents

① Elderly's feedback for initial floor plan	② Final floor plan corrected
	

4. Result analysis

4.1. General characteristics of the participants

Each group of workshop is composed of two groups for urban and rural area each with rural group(group 1, group 2) composed of each 5 members as single, couple+single household, with urban group(group 3, group 4) composed of each 3 members as single and couple household.

Socio-demographic feature variables of participants are sex, age, presence of partner, income, living cost and employment status. Average age was 69 in urban area while that of rural area is 73 showing rural area composed of participants at higher age and in terms of urban elderly, there were 1 in senior job placement, 2 regular workers, 3 non-employed and in rural area, main income came from basic senior pension(200 thousand won) and senior job placement(200 thousand won) and only 6 of them who participated in senior job placement¹¹⁾ worked and other remaining 4 were unemployed. Excluding participants with high monthly income among these(1400 thousand won), most of them were receiving basic senior pension. Average income of urban area was higher (823 thousand won) than that of rural area(42.5) and average living cost monthly was also higher in urban area(533 thousand won) than rural area(480 thousand won).

Housing characteristic variables are housing types, residential cost(deposit, monthly rent) and residential period. The participants in this research were all residents of public rental apartment for where participants in rural area were built in 2007 and is a national rental housing that LH(Korea Land&Housing corporation) provides. The apartment that participants in urban area live was built in 1992 and is a permanent rental apartment that SH(Seoul Housing corporation) provides. Most of participants entered and have lived as soon as the apartment was built and especially in the case of urban area, many people resided there for 23 years and we could check fixed population composition, one feature of permanent rental apartment, through this and found out apartment residence experience of urban elderly was longer than in the rural area. Aside from recipients of basic living, housing cost was mostly within 100 thousand won and they were two in the urban area, with their monthly rental fee being each 30 thousand won and 6 thousand won. And mostly, satisfaction regarding current housing was generally high, especially regarding physical features of apartment(elevator, insulation and protection against winds, etc.)

11) Senior job placement is done in the objective of social participation and income supplement targeting elderly over 65 in the income class lower than 70% and since it is done after application at intervals from about 3 months to 5 months, it cannot be said to be stable income and in the case of basic living recipient, there is a negative possibility that they can be excluded from the benefits they receive as recipients of basic living along with health problems they answered they do not do the work although they want to.

4.2. Result by research problems

Based on discussed content in three workshop, we put distinguished then synthesized, organized the evaluation regarding workshop panel method and space composition feature, response toward elderly shared housing which is the main research problem of this research.

1) Response toward elderly shared housing

When workshop started, awareness about elderly shared housing did not exist almost. So in 1st workshop, we examined the level of ratio of shared type housing through preference survey regarding elderly housing types of Lee, Y.S. not elderly shared housing. As a investigation result, results were shown different according to the information provision about aging society. Prior to information provision, preference ratio about shared house was 80% in rural area and 50% in urban area. Although preference ratio regarding shared housing was high even before information provision, they were shown higher after information provision with 80% in rural area and 50% in urban area. But there were some who worry about the repulsion regarding common living and especially urban elderly showed greater repulsion toward common living relatively to rural elderly. However, while three workshops are being done, understanding toward elderly shared housing increased and positive awareness regarding common living was formed. The positive factor about elderly shared housing was that it can have effects of living cost reduction and decreased in loneliness in old life and that it can give energy to the life. There results show that even elderly themselves recognize the seriousness of problems such as lonely death of elderly and aging and that they think it is the proper solution for these problems. These positive attitudes were reflected in moving plan as well so most of participants answered that they want to move if given a chance and they regarded the age of 80~85 as proper entering period. The followings are the summary of representative opinions showing positive responses regarding elderly shared housing.

Rural-single-A: Me, too. I thinks it would be happy without loneliness with people gathering together talking to each other, laughing.
Urban-single-H: (...) There is a case, for example, eating together is better than eating alone. I could be with other people seeing their face and even when I am sick. I would like that.
Urban-couple-F: So I want to tell it to people I know well. I was not thinking of doing it at first, but just had that thought in the second time.

But couple household desired moving out when they are left alone after partner's death thinking that having a rough relationship with partner would reveal their weakness and common living is not needed for they feel less loneliness by living depending on each other. The followings summarize the representative opinions that showed negative responses regarding elderly shared housing.

Urban-couple-F: It cannot be good. In our case, my husband and I do not get along well. I am ashamed of living with him because we make a big noise, shouting at and insulting each other whenever we get in a fight whether it is a night or day.

2) Space composition features preferred of elderly shared housing

(1) Features of space composition and service by group

Space arrangement was done in 2nd workshop after extracting preferred space and service factors by individual group members and with the same method, one conclusion was drawn through group discussion process. On the basis of it, we examined the results regarding each factor by classifying into private space, shared fspace and service. Before examining the results of agreements, following <Table 6> shows the comparison of group agreements results and individual results by taking an example of shared space in group 1.

Table 6. Example: comparison of the individual case & group arrangement

Shared Space	Group	Individual case					Group arrangement
		1	2	3	4	5	
Livingroom		●	●	●		●	●
Diningroom		●	●		●	●	●
Bathroom							
Sauna				●			
Toilet		●	●	●	●	●	
Hobby room			●				●
Exercise room				●			
Laundry room		●	●	●	●	●	●
Garden		●	●			●	●
Guest room							
Warehouse		●				●	●
Parking lot		●	●	●	●	●	●
Meeting room							
Office							
Library							
Small assembly hall							

As a result, we can see the difference between individual results and agreements results. This difference showed that discussion can make people consider the parts they have not considered and that what majority preferred can be determined to be unnecessary through discussion. By comparison like this, we can know that participants put what they want into shape gradually as workshop is went along and this is the data in this research showing that agreements show their preference.

First, result of preference for the private space is shown in following <Table 7>. Both rural and urban area wanted to use private space for personalized use but differences were shown in the composition of private space and housing types. Urban area preferred detached house while rural area preferred apartment. This shows that urban area has a high demand toward living

together with nature in a detached house while rural area has a high demand toward convenient physical environment of apartment. Regarding private space composition, some participants of urban group said they must have living room of private space for they have to host the private guests there rather than shared living room. Rural area wanted only bedroom and bathroom while urban area wanted private space even with kitchen and dining room, living room along with bedroom and bathroom. This means that there is a high demand toward independent living from urban area group relatively.

Table 7. Comparison of preferred private space by group

Private Space		Rural		Urban	
		Group 1	Group 2	Group 3	Group 4
Housing type	Detached house			●	●
	Multi-household house				
	Apartment	●	●		
Bed RM	Private only	●	●	●	●
	Share				
Kitchen & Dining RM				●	●
Living RM				●	●
Bath RM	Toilet	●	●	●	●
	Basin	●	●	●	●
	Shower	●	●	●	●
	Bathtub			●	

Second, following <Table 8> shows the preference result of shared space.

Table 8. Comparison of preferred shared space by group

Shared Space		Rural		Urban	
		Group 1	Group 2	Group 3	Group 4
Livingroom		●	●	●	●
Diningroom		●	●		
Bathroom					
Sauna				●	●
Toilet			●		
Hobby room		●	●	●	
Exercise room			●		●
Laundry room		●	●	●	
Garden		●		●	●
Guest room				●	●
Warehouse		●		●	●
Parking lot		●	●	●	●
Meeting room					
Office			●	●	●
Library/Study room			●		
Small assembly hall					

Shared space that all 4 groups desire was shared living room and garage. Shared living room was recognized as the center space of common living and garage was the space for guests such as children and friends who are not residents wanted by every group. But there was a difference in size because urban area wanted to have 4 cars while rural area requested 2. Another big characteristic

is that urban area does not demand shared dining room. They basically wanted the method that they prepare and eat the meal individually in individual space and that they sometimes eat together in the shared living room. Besides, urban area had a demand for guest room. We could see the preference regarding independent life of urban area group when urban area said they need extra space for guests when there are guests while rural area thought of methods that share the private space with guests.

Third, result of preference for the service is shown in following <Table 9>.

Table 9. Comparison of preferred service by group

Service		Rural		Urban	
		Group 1	Group 2	Group 3	Group 4
Meal support		●	●	●	●
Cleaning support		●	●	●	●
Healthcare		●	●	●	●
Neighbor exchange			●		●
Leisure support		●	●		
Education support			●	●	
Vocational training					
Building management				●	●
Security/Guard		●	●	●	●
Life management		●			
Counseling				●	

The service that both urban and rural area want was meal support, cleaning support, healthcare and security/guard items. Considering health worsening in old life, health care service was wanted basically by most of them and to prepare for the difficulties of daily routine function performance, they wanted convenient and safe lives through domestic services like meal support, cleaning support and security/guard service. But there was a difference in the provision way of meal support service. Urban area wanted to cook the meal on their own after receiving food expenses, not food but rural area wanted to be provided with food such as side dish delivery. The items with difference between two groups are leisure support and building management. Rural area preferred leisure support service while urban area did not and the opposite was applied to security/guard. Rural area thought of receiving help from nearby neighbors as another way for building management item and did not want the service for it because of the burden of service cost above all. But since urban area cannot take care of building on their own in their old life, they wanted to be provided with more professional management service after hiring managers and giving him the responsibility regarding building management.

(2) Comparison of space arrangement by group

Comparison was done like following <Table 10> in the center of location relation with private space and shared space. As analysis results, both urban and rural area placed the space with similar function such as study and hobby room, laundry room-bathroom

near and set them as one area despite they are composed of space with various functions. To add, we can see that private space is arranged in relatively distributed form centering on shared space in the center of whole space. Thus, shared space has a role of distinguishing private space. And we can see that urban area has a higher demand for independent space for they demand 3 private space area than rural area with 2 divided private space area.

Table 10. Comparison of space arrangement by group

	Group 1	Group 2
Rural		
Urban		

□ : Private Space ▨ : Public Space

3) Evaluation of workshop

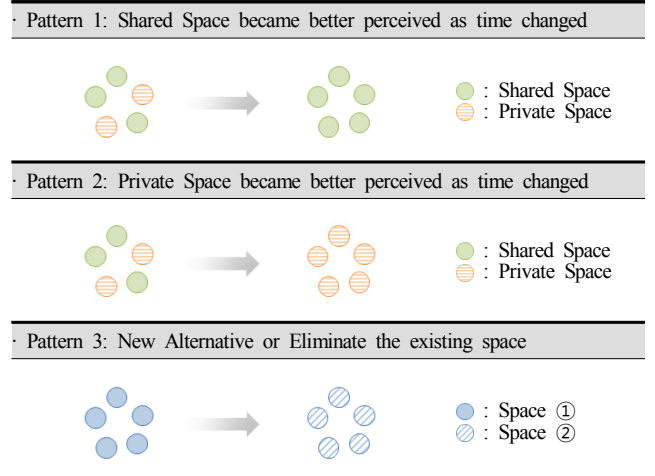
Elderly shared housing has its basis in common life and it is important to understand the demand of various residents and reflect their agreements and in the situation where awareness about elderly shared housing is deficient, we used workshop panel method determining that it is important to draw inherent thoughts of participants rather than conducting a simple survey. Using various visual educational content, pictogram block with spatial function, participants were able to participate actively and feel interests. To confirm the effect of this research method, workshop panel method and participation tool were classified and examined.

In the evaluation regarding the workshop which is the research method in this research, most participants recognized the process workshop that draws one agreement through discussion after hearing opinions of many people positively and by conducting a research at a certain time interval, understanding towards subjects increased and we could see the changes in attitude about elderly shared housing. Furthermore, they answered there must have been difficulties in using floor plan, pictogram block with space function and various educational content used in the workshop without help or explanation from researches although all participants had fun with them and were at ease with them understanding about them. Following is the representative opinion of participants regarding the contents mentioned above.

Rrural-single-B: (...) We can have agreements with good opinions putting all the opinions together. That is wonderful.
 Urban-couple-D: (...) At first, it was hard to understand even with explanation but not I understand for sure after repeating it two and three times.

Likewise, space and service that each group prefers were organized and <Table 11> makes a pattern of the process drawing agreements based on this and we examined how the attitudes and opinions of participants change in that process.

Table 11. Changing pattern in space composition through workshop



Pattern 1 show the change in preference for the shared space through exchange of the information for the purpose and advantages of the communal living in the discussion process while they had a high preference form the private space in the first. This shows that the understanding for the communal living expanded the area to accept the shared space, the installation of the shared laundry room is a good example.

Pattern 2 puts more significance on the private space even after providing the information for the communal living as opposite to Pattern 1. An example of this Pattern 1 is to include the bedroom+bathroom+kitchen and dining room+living room in the private space as well as the guest room.

Pattern 3 is for the case where they had preferred space but deleted the agreed space or induced another agreement. Group 2 members liked sauna but deleted it due to some problems arising from having 2 saunas due to gender matter and the difficulty for maintenance and management via discussion but installed a shared bathroom and group 4 also deleted sauna due to difficulty in maintenance and management.

4.3. Final floor plan

In 3rd workshop, final floor plan was arranged reflecting the discussed contents in the process of floor plan confirmation¹²⁾. And these were organized in the table regarding final floor plan, space composition, size of the room distinguishing rural area from urban

12) This research conducted a research on space composition and preference regarding elderly shared housing in the premise that an opportunity to live in established elderly shared housing is given not targeting the place where construction plan exists or actual establishment is planned.

area. First, following <Table 12> is the final floor plan of rural area (group 1 and 2).

Table 12. Final Floor plan of rural group

Group 1				
Composition	Private Space	Bed RM+Bath RM(toilet, basin, shower)		
	Shared Space	Living RM, Dining RM, Hobby RM, Laundry RM, Parking lot, Warehouse, Garden		
Area(m ²)	Total	262.48	Living RM	80.37
	Shared Space	70.2	Entrance	6.5
	Private Space	21.96 / 22.15 / 19.78		

Group 2				
Composition	Private Space	Bed RM+Bath RM(toilet, basin, shower)		
	Shared Space	Living RM, Dining RM, Hobby RM, Laundry RM, Parking lot, Toilet, Office, Library, Exercise RM, Bath RM		
Area(m ²)	Total	376.14	Living RM	139.45
	Shared Space	18.034	Entrance	6.8
	Private Space	24.49 / 21.72 / 24.49		

In the case of rural area, private space is composed of bedroom and bathroom, especially, group 1 was sensitive to economical matter, they planned the smallest area(262.48m²) in order to save the maintenance cost. The shared spaces which the rural group wanted to have were the living room, dining room, hobby room, laundry room and parking lot. The rural group showed a positive response for eating together in the shared dining room and planned a parking lot for visitors. They also planned a hobby room separately in order to have various activities each other.

Following <Table 13> is the final floor plan of urban area (group 3, group 4).

Table 13. Final Floor plan of urban group

Group 3				
Composition	Private Space	Bed RM+Bath RM(toilet, basin, shower) +Kitchen&Dining RM, Living RM		
	Shared Space	Living RM, Office, Warehouse, Guest RM, Parking lot, Garden, Sauna, Laundry RM, Hobby RM		
Area(m ²)	Total	430.58	Entrance	86.65
	Shared Space	104.61	Entrance	8.82
	Private Space	46		

Group 4				
Composition	Private Space	Bed RM+Bath RM(toilet, basin, shower) +Kitchen&Dining RM, Living RM		
	Shared Space	Living RM, Office, Warehouse, Guest RM, Parking lot, Garden, Exercise RM		
Area(m ²)	Total	400.99	Living RM	93.57
	Shared Space	73.25	Entrance	11.64
	Private Space	44.5		

Urban group preferred the private space equipped with all functions including the bedroom, bathroom, kitchen and dining room and living room, thus the private space was increased comparing to that of rural group, and total area was also increased by 100m² to original 330m² accordingly. Though they cognized the cost increase due to the maintenance, they wanted to have the private space equipped with all functions. The shared spaces the rural group wanted to have were the living room, office, warehouse, parking lot and vegetable garden. Rural group showed a positive response for sharing the private space for the visitors but the urban group wanted to be ensured of the independent space for

both the guest and resident planning a guest room separately.

The biggest differences between the two groups were the preference for the spatial composition of the private space, shared dining room and guest room. This might be caused by the perception difference by area for the scope of communal living and independent life. Since rural participants are familiar with the communal living comparing to urban participants and open attitude, they are supposed to have no repulsion for having ties by preparing the food and eat together, but the urban group has a repulsion for joint preparation of the food and has higher preference from the independent life out of the communal living considering the shared living room as the place available for residents only.

4.4. Discussion

This research has a purpose to compare and analyze the preference characteristics of the rural and urban participation for the elderly shared group house letting them participate in planning such house. As a result of the research, there was a difference in preference for the spatial composition and service element between the areas. This result is caused by the difference of the life style and culture, and the characteristics by area and its influence on the preference could be outlined as follows:

First, rural group is more broad-minded than urban area in space composition. Rural group had more active attitude in common life relatively than urban group like using shared dining room and laundry room together. However urban group wanted to have a separate guest room, host the guest in the private living room and refuse to use the shared dining room that they wanted to be guaranteed of the independent life.

Second, all participants were always expecting to receive the visitors regardless of residential region. But there was regional difference in positiveness regarding this. Both rural and urban group needed parking lot. This means that elderly want to continuous communication with people including children and friends. Especially the urban participants were more active for the visitor preparing the guest room separately.

Third, compensation for the deficiency by region was shown on the spatial preference. Rural group preferred apartment while urban group preferred detached house. Rural group prefers apartment because of high desire towards convenient physical environment of apartment through experience regarding poor physical environment of detached house and natural elements before while urban group reflects their longing about living in detached house where exposure to nature is easier rather than conveniency of apartment life in their old life because of their long-term apartment living. And rural area had a preference

towards educational support service and leisure support. Considering low chance of opportunity of various leisure activities in rural area, it can be thought as a demand towards lacking thing that they do not maintain.

Fourth, all of four groups worried about invasion of privacy. Noise problem was the main one there so rooms were placed isolated to solve this matter. However, they presented an alternative to put the rooms together on condition that a thorough sound proof shall be provided considering the waste of space and another plan to keep the isolation but use such spaces for other function.

5. Conclusion and suggestion

This research aimed to explore the possibility of elderly shared housing in-depth as elderly housing alternatives and here, we tried to examine the overall rural and urban area with different aging pattern and cultural environment to each other. This research utilized small group workshop panel method to examine the intrinsic demand of them thoroughly helping understanding about elderly shared housing with new concept for elderly. The summary of investigation result is as follows.

First, both rural and urban had a positive attitude towards elderly shared housing. Expectations in depression decrease through common life, living expense reduction, housing expenses burden reduction, service provision with especially single elderly showing more active responses. This result proved the possibility of elderly shared housing as elderly housing alternatives and effects of workshop methodology by conducting understanding and evaluation of elderly shared housing which is a new concept as of now. Especially it is thought to be proper for single elderly. Based on this possibility, the way to plan elderly shared housing in leased apartment construction or leased apartment specialized for elderly supplied from the public as means to distribute and spread elderly shared housing is needed to be reviewed.

Second, there was a regional difference in preferred composition or service elements. Since intrinsic thoughts in each rural and urban elderly are different, these differences should be improved into various forms rather than remaining in uniform forms reflecting them from the initial stage of building planning and it would be more effective if developed centering on rural area with broader mind in joint life. In this perspective, roles of experts in building design and housing plan who can design creatively understanding the true need of residents are regarded important.

Third, this research was able to grasp the thoughts of participants which are hard to expect through questionnaire in-depth utilizing small group workshop panel method. Especially undergoing the process of initial response and information

exchange, changing responses were obtained thus drawing the demand for space more precisely and stably. Thus the result obtained utilizing the features of qualitative research called exploratory research and small workshop panel method according to this is needed to be understood as a research with insight into future possibility for it does not aim for generalization like questionnaire survey.

Fourth, this research supposed 5 people reside then created the space. Thus more various research regarding the size from small-sized unit to wide-scaled complex. And since this research targeted residents of public rental apartment who are low-income class, possibility and value of it as housing alternatives would be valued much more if various results can be gained through exploratory researches according to the class expanding the investigation targets.

This research was conducted in the aspect that there needs preparations for alternatives in housing parts and revealed that elderly shared housing can be housing alternatives which can lessen individual and social burden when proper residents are put in the dimension of social interaction and can promote sustainability of local community.

References

- [1] Cho, J.H., Choi, J.S., "Case on Resident's Participation Workshop for Cohousing Plan", *Journal of Korean Home Management Association*, Vol.27, No.6, 155-169, 2010
- [2] Choi, B.S., "A Study on Generating the Strategies and Practical Tasks of Policy on Rural Houses", Ministry of Agriculture, Food and Rural Affairs", 2013
- [3] Choi, M.K., "A Study on the Difference of Residential Consciousness by Regional Comparison of Urban vs Rural Elderly in Korea", *Journal of the Korean Institute of Rural Architecture*, Vol.6, No.3, 113-122, 2004
- [4] Choi, S.J., "Types and Prospects of Elderly Welfare Facilities in Aging Society", *Architecture Institute n Korea*, Vol.42, No.2, 14-21, 1998
- [5] Choi, S.M., Han, K.S., "A Reformation Proposal of Rural Empty Homes Strategies", *Journal of Korean Society of Rural Planning*, Vol.8, No.1, 85-93, 2002
- [6] Day-Lower, D. (1983). *Shared housing for older people: A planning manual for group residences*. Shared Housing Resource Center. 2
- [7] Han, G.H., Kim, J.H., "The Ecological Characteristics of the Communities and Social Interactions of the Elderly in rural Korea", *Korean J. Community Living Science*, 16(1), 73-88, 2005
- [8] Hong, H.O., "A Proposal for Community-based Type Dwelling as Alternative Housing for Elderly in Korea", *Korean Association for Housing Policy Studies*, Vol.7, No.2, 75-91, 1999
- [9] Hong, H.O., "Attitudes and Preferences about Elderly Communal Housing", *Journal of Korean Home Management Association*, Vol.19, No.5, 147-166, 2001
- [10] Hong, H.O., "A Study on the Minimum Standards of Housing Repair for Older People Living in the Community", *Journal of Korean Home Management Association*, Vol.23, No.2, 11-22, 2005
- [11] Hong, H.O., Jee, E.Y., "Residential Preferences for Elderly Women in Urban Areas", *Family and Environment Research*, Vol.37, No.5, 123-136, 1999
- [12] Hong, H.O., Yoo, B.S., "Preferences about Senior Congregate Housing by Attitudes on Work and Leisure in Later Life", *Journal of Korean Home Management Association*, Vol.21, No.5, 13-24, 2003
- [13] Hong, H.O., Jee, E.Y., "Comparison of the Opinion about Senior Congregate Housing", *Journal of the Korean Housing Association*, Vol.15, No.1, 163-174, 2004
- [14] Hong, Y.K., Oh, H.K., "Preference for the Spatial Planning Elements of Units in Senior Congregate Housing according to Pre-Senior People", *Journal of Korean Home Management Association*, Vol.23, No.2, 37-47, 2005
- [15] Huh, M.G., Dai Erbiao, Kim, D.S., Park, H.J., "Analysis of Economic Growth Pattern according to Demographic Changes", *Korea Institute for Industrial Economics & Trade*, 2014
- [16] Hwang, J.I, Choi, Y.J, Kim, H.J., "Analysis of Current Situation and Perception of Empty Homes Owners' Managing and Using Rural Empty Houses", *Journal of Agricultural Extension & Community Development*, Vol.19, No.4, 989-1020, 2012
- [17] Hwang, S.H., "Preference of elderly housing arrangement according to aging situation by baby boomers", *Master's Thesis, Yonsei University*, 2010
- [18] Hwang, Y.W., "A Basic Study on the Spatial Plan of Standard Rural Houses Design 2009 Plan Types", *Conference Journal of Architecture Institute n Korea*, Vol.31, No.2, 171-172, 2011
- [19] Jung, E.J., Lee, Y.S., "Analysis of Current Communication Tools Supporting User Participatory Design", *Design Convergence Study*, Vol.36, 227-242, 2012
- [20] Jung, K.H., Oh, Y.H., Lee, Y.K., Son, C.G., Park, B.M., "Report on the Aged", *Ministry of Health & Welfare Korea Institute fir Health and Social Affairs*, 2011
- [21] Jung, Y.J., "A Study on effects of Resident's Participation in the Process of Planning Community Base Facility for Urban Regeneration", *Master's Thesis, Yonsei University*, 2013
- [22] Kim, E.J., "Survey analyst: search methodology", *Seoul: Hakingbooks*, 2003
- [23] Kim, H.R., Lim, C.S., Kim, E.J., Kim, S.B., Choi, J.A., "A Study on the Classification System of the Target Elements for Rrural Village Remodeling System", *Journal of Korean Society of Rural Planning*, Vol.18 No.3, 111-122, 2012
- [24] Kim, S.A., Lee, J.M., Jung, S.M., Cho, S.J., Lee, Y.S., "Characteristics of Planning Components of 4-Bay Floor Plans Through Small Group Workshops", *Conference Journal of Architecture Institute n Korea*, Vol.24, No.2, 139-242, 2004
- [25] Kim, Y.C., Son, B.H., Hong, W.H., "A Research on the Actual Conditions of Roofing Asbestos Use and Residents Consciousness in Rural Areas", *Journal of Architecture Institute n Korea*, Vol.26, No.11, 363-370, 2010
- [26] Kim, Y.H., Hong, H.O., "Residential Use according to the Preferred Developer Type for Senior Congregate Housing", *Journal of Korean Home Management Association*, Vol.23, No.5, 133-143, 2005
- [27] Kim, Y.J., "A Study on Residential Remodeling and Needs of Elderly Households to Activate Ageing in Place", *Journal of Human Ecology*, Vol.23, 13-35, 2006
- [28] Ko, Y.H., "A Behaviour Approach to the Planning of Small Apartment for Middle Class Residents", *Doctoral Dissertation, Yonsei University*, 1993.
- [29] Kwon, S.J., "A Study on the Types and Delivery Patterns of Elderly Care Facilities in America", *Journal of Architecture Institute n Korea*, Vol.17, No.10, 2001
- [30] Lee, C.W., Ji, N.S., "A Study on the Utilization of Empty House for Rural Activation in Korea", *Journal of Korean Society of Rural Planning*, Vol.19 No.3, 169-182, 2013
- [31] Lee, E.G., Jang, T.J., Joo, W.I., "A Study on the Use of the Rural Housing Standard Plans", *Journal of the Korean Institute of Rural Architecture*, Vol.13, No.4, 17-24, 2011
- [32] Lee, J.H., Lee, Y.S., Lee, S.J., "The responses on elderly shared group house as a socially integrated housing alternative in aging society", *Journal of Korea Institute Ecological Architecture and Environment*, Vol.7, No.4, 63-74, 2007
- [33] Lee, J.I., Lee, Y.S., Kim, Y.S., "Small Parks Planning with Community Participation by Using Digital Tools", *Journal of Korea Institute Ecological Architecture and Environment*, Vol.12, No.6, 3-10, 2011a
- [34] Lee, J.I., Kang, H.Y., Leem, J.Y., Kim, K.M., Lee, Y.S., "A Study on Resident-friendly Community Center Design Technology", *Korean*

- Institute of Interior Design Journal, Vol.13, No.1, 205-201, 2011b
- [35] Lee, J.W., "A Study on the Design Characteristics of 2009 Standard Rural House Design", Journal of the Regional Association of Architectural Institute of Korea, Vol.13, No.1, 133-142, 2011
- [36] Lee, J.Y., "A study on the Planning of User Participation Community Center", Master's Thesis, Yonsei University, 2013
- [37] Lee, K.S., Park, Soo-Bean, "A Study on the Households' Housing Needs for Aging in Places", Journal of the Korean Housing Association, Vol.20, No.5, 123-132, 2009
- [38] Lee, Y.K., "Trends in Elderly Households and Their Policy Implications: 1994~2011", Health and Welfare Policy Forum, 211, 45-54, 2014
- [39] Lee, Y.S., "Korean Housing Welfare Model for the Vulnerable", Housing Welfare System Research Center, 2014(Unpublished)
- [40] Lee, Y.S., Oh, C.O., "Preferred Characteristics of Elderly Housing Depending on Four Aging Situations", Journal of Architecture Institute in Korea, Vol.9, No.2, 1993
- [41] Lee, Y.S., Park, J.A., Oh, C.O., "A Study on the Environmental Affordance for the Elderly-Couple Household", Journal of Korean Gerontological Society", Vol.14, No.1, 84-94, 1994a
- [42] Lee, Y.S., Shin, H.K., You, S.Y., "Small Group Workshop Panel Study to Design Unit Interior and Neighbourhood Environment of Small Apartments-Based on the Resident's Behaviour and Needs", Yonsei Journal of Human Ecology, Vol.8, 64-73, 1994b
- [43] Lee, Y.S., Yoon, M.K., "Case Studies for the Planning of Small Apartment for Families with Working Wives", Yonsei Journal of Human Ecology, Vol.8, 74-83, 1994c
- [44] Lee, Y.S., Hong, M.H., Yoon, M.K., "A Small Group Workshop Plane Study for Planning Interior Units and the Neighbouring Environment of 30s Pyung Apartments-Based on the Resident's Housing Behaviour and Needs", Yonsei Journal of Human Ecology, Vol.9, 40-51, 1995
- [45] Lee, Y.S., Shin, H.K., Hong, M.H., "Comparative Analysis of Shared Space Needs according to Social Class through Small Group Workshop Panel Method", Journal of Korean Housing Association, Vol.8, No.2, 1-2, 1997
- [46] Lee, Y.S., Kim, M.S., Lee, J.H., "Preferred Living Arrangement of the Elderly referring to the possible provision of Housing services". Journal of Korea Institute Ecological Architecture and Environment, Vol.7, No.5, 99-106, 2007a
- [47] Lee, Y.S., Lee, S.M.i, Kim, M.S., Lee, Y.J., Lee, S.M., "A Classification of Elderly Housing Types Toward a Holistic Understanding", Journal of Korea Institute Ecological Architecture and Environment, Vol.7, No.1, 81-93, 2007b
- [48] Lee, Y.S., Lim, C.S., Lee, Y.K., Hwang, G.Y., "Response of Prospect Tenants in Housing Improvement Area to Shared Alternative Housing", Journal of Korea Institute Ecological Architecture and Environment, Vol.9, No.3, 13-20, 2009
- [49] Lee, Y.S., Kim, J.S., Jung, E.J., "Effectiveness of "Village Image Construction Tool Kit" in the Residents Workshop of a Housing Improvement Area", Journal of Korean Housing Association, Vol.21, No.1, 67-77, 2010
- [50] Lee, Y.S., Shin, H.K., Lee, D.J., Yoon, H.K., Lee, J.M., Yoo, H.J., "Characteristics of Housing Preference for Each Aging Situation before and after Providing Information of Aging Society", Journal of Korea Institute Ecological Architecture and Environment, Vol.11, No.5, 119-127, 2011
- [51] Lim, J.E., "Trend and direction for development of community center in Korea", Master's Thesis, Yonsei University, 2006
- [52] Lim, S.H., Lee, Y.S., "Elderly response to alteration of existing house function in housing improvement area", Journal of Korea Institute Ecological Architecture and Environment, Vol.10, No.2, 9-18, 2010
- [53] Matsuo-Tadasu, Nishikawa Yoshiaki, Isa Atsushi, "Machidukuri citizen participation-participation and leadership-self-reliance and partnership", Gyounggido: Hanul, 2006
- [54] Nam, K.S., "The Concept and Analysis of Pannel Survey", Korea Employment Information Service, n.d
- [55] National Statistical Office, Statistical Report on the Aged, 2014
- [56] Oh, C.O., "A Study for Developing Housing Alternatives for the Elderly Focused on Group Home and Shared Housing for Aging in Place", Journal of the Korean Housing Association, Vol.19, No.3, 59-70, 2008
- [57] Park, H.Y., Lee, D.J., Lee, Y.S., "Response to Elderly Housing Integrated Apartments in the Perspective of Social Marketing", Journal of Korean Housing Association, Vol.22, No.6, 1-10, 2011
- [58] Park, S.H., Lee, J.W., "Qualitative research process and research design in the analytical point of view", Conference Journal of Seoul Association for Public Administration(2nd), 785-799, 2009
- [59] Park, S.Y., Choi, E.H., Lee, G.R., Kim, T.I et al, "Comprehensive Housing Strategies Responding to the Aged Society". Korea National Housing Corporation, 2006
- [60] Press release of Youngdeungpo Ward Office, "Youngdeungpo-Gu, Actively implement-Live Together", 2014 (http://m.ydp.go.kr/smart/board/bbs.do?jsessionid=dwWPYBI7I3z8J7J5Ym88xIkwlMFUSK644PXXb4MmKeTgDkiSi8GLEac5A55LrJH.web1_servlet_engine1?cfgIdx=114&mCode=E04000000&staus1=T&op=view&idxId=145715&page=1)
- [61] Seo, E.M., Hong, H.O., "Middle-aged People's Attitudes about Housing in Their Later Life and Their Intention to Move into Senior Congregate Housing", Journal of Korean Home Management Association, Vol.22, No.6, 121-131, 2004
- [62] Seo, E.M., Hong, H.O., "Preferences on Development and Management of Senior Congregate Housing according to the Preferred Developer Type", Journal of Korean Home Management Association, Vol.23, No.6, 39-51, 2005
- [63] Seo, J.H., "A Study on Direction for Rural Community Building", Journal of Korean Society of Rural Planning, Vol.19 No.1, 33-41, 2013
- [64] Seo, Y.Y., "Evaluation of Accessibility to Multi-household-Multi-studio Type House for Developing Senior Congregate Housing", Journal of Korean Home Management Association, Vol.23, No.6, 67-77, 2005
- [65] Song, E.A., "A Study on the Method of Application for Participatory Design - Focused on Local Public Complex in Japanese", Journal of Korean Institute of Culture Architecture, Vol.25, 77-84, 2009
- [66] Weal, Francis, Weal, Francesca, "Sheltered Housing(Lee, Yeun-Sook trans)", Seoul: Kyungchun Publisher, 1993
- [67] Yeom, H.S., "A Study on the Development of Senior Share House for the Elderly Living Alone", Master's Thesis, Konkuk University, 2014
- [68] Yoo, B.S., Hong, H.O., "Analysis of the Preference and Planning on the Physical Features of Senior Congregate Housing", 58th Conference Journal of the Korean, Home Economics Association, 2005
- [69] Yoon, M.K., "Case studies for the Planning of Small Apartment for Families with working housewives", Master's Thesis, Yonsei University, 1993
- [70] Yoon, M.S., "Ageing Problems in terms of Economic", Seoul Economic Bulletin, 2, 11-21, 2013