

The Abstract of
『Basic Data Research for the design of interior space and
storage furniture of the Apartment House Study』 *

*A cooperative research in 2000 between HANSSEM Co. and Department of Housing & Interior Design of Yonsei University in Seoul, Korea

The primary purpose of this research is to determine relations between household products, data which offers basic requirements to design living space and furniture, and life style to provide information which can be used to improve human life. Especially, by determining characteristics of residents in 3-bedroom apartment, such as how spaces of an apartment are used and what kind of household products are owned, the results of the study will provide some basic materials to home improvement.

For 28 days from March 3rd to March 31st in 2001, housewives in the capital region were administered the survey. And SPSS/PC was used to analyze the data of the survey.

Since the objectives of the research are to organize and furnish data to better understand problems, such as storage-related problems, arranging data in a user-friendly way itself should be considered as the results of the study. However, it is important to summarize the results to indicate some inclinations shown in the survey.

1.1 General characteristics of the sample

The largest portion of the sampling is a household of which husbands and wives are between the ages 30 and 40. Their occupations of men are mainly office workers and full-time housewives as for the women. Majorities of the sampling are high school or college graduates with 76.5% of husbands and 54.7% of wives are college graduates. The age distribution of the eldest children varied. However, it is indicated that 56.7% of them are under 7th graders and boys outnumber girls.

The largest portion of the couples who responded to the survey have been married for more than 6 years and less than 10 years. The biggest number (29.8%) spend more than 1.5 million won and less than 2 million won per month. And 75% of the total respondents spend somewhere between 1 million won and 2.5 million won monthly.

They have moved from 2 times to 5 times and majorities of them own their housing. As to the size of the present housing, they are satisfied to some extent, but prefer to move to larger places. They most prefer to move to an apartment.

More respondents said they have remodeled their present housing in some ways.

To the questions "Have you ever remodeled your present housing? If you have, "when?," more respondents said "Yes, we have." And many of them repair or remodel their housing before they move in. The largest number of respondents said they usually change finishing materials of the place. Running a second is the installation of built-in closet. That is, people tend to have more beautiful and convenient places rather than changing the whole structure of the place. Remodeling cost is usually under 10 million won.

1.2 Characteristics of each space and household products

1.2.1 Bedroom No. 1

Majority of the respondents said that they use bedroom No. 1 as a master bedroom for a husband and a wife and expressed their satisfaction. Most respondents said the size of the room is appropriate while a significant number of other respondents feel it's not spacious enough. In terms of storage spaces, the biggest portion of the respondents expressed the average degree of satisfaction, However 30.8% respondents said they are not quite content with storage spaces mainly because of some structural problems such as shortage of storage space and not systematically designed furniture. A high percentage of respondents want a more systematic storage space, which indicates that they would like the inside of storage furniture more systematic to solve the problem of limited space.

In bedroom No. 1, there are closets for blankets and clothes, beds, dressing tables, chairs, chest of drawers, and TV racks in the order of quantity. Which means that bedroom No. 1 is mainly used for a master bedroom. Respondents said that the furniture they own is a must in their life. They are satisfied relatively with the use of furniture and willing to take them when moving to

other place. About the design of furniture, majority expressed above average degree of satisfaction.

1.2.2 bedroom No. 2

Larger portion of the respondents said they use bedroom No. 2 for children while others said they use one for study, bedroom for husband and wife, or dressing room. A high percentage of the respondents' think that bedroom No. 2 is too small, however, they expressed no inconvenience about the use of the room. More respondents are satisfied with storage space in bedroom No. 2. Ones who are not happy with storage space in bedroom No. 2 complained that bedroom 2 is too small to arrange things. Which means they want bedroom No. 2 bigger.

To solve the problem, bedroom No. 2 should be larger and require more systematic storage furniture. But we can only rely on magic to make bedroom No. 2 bigger in a limited space of an apartment, therefore, the only solution perceived by the respondents is better storage systems. It is indicated that there are desks, chairs, beds, bookshelves, closets, and computer desks in the order of quantity in bedroom No. 2. Which is related with the fact that this room is mainly used for children. Furniture in bedroom No. 2 is perceived as a must by the owners who are also content with the function and design.

1.2.3 bedroom No. 3

Bedroom No. 3 has more various functions than bedroom No. 2, mainly being used for children, otherwise as study, store room, or dressing room. Couples with one child usually use bedroom No. 3 in a different way other than its original function. Respondents are quite satisfied with bedroom No. 3, but complained also about its being too small. More people expressed their dissatisfaction in terms of storage mainly due to shortage of space. Largest number of the respondents thinks that bedroom No. 3 should be bigger to solve this problem. As to the furniture in bedroom No. 3, there are chairs, desks, bookshelves, beds, and closets in the order of quantity. Which indicates the main function of this room is either a bedroom for children or a study. Also, built-in closets, hangers, or dressers placed in this room imply that this room is used as a dressing room as well.

A significant number of respondents said they are going to take the furniture in bedroom No. 3 when moving to other places. They replied that the furniture in this room is very necessary

and they are content with the use of them. As to the design, they expressed above average degree of satisfaction.

1.2.4 Living room

Living rooms are usually used for their original function. A higher percentage of respondents said that they are satisfied with the function and size of living rooms. But regarding the storage, more people expressed less than average degree of satisfaction.

The main complaint about storage in living room is that storage furniture is not systematically designed. To improve storage in living room, biggest portion of the respondents said that storage furniture in living room should be more functional and systematic.

The furniture in living room, there are sofas, TV racks, dressers, audio set racks, air-conditioners, and tables in the order of quantity. Which means that this room is mainly used for its original function.

Furniture in living room is considered as a must by users who are relatively content with the use of the furniture. As to the design of furniture in living room, majority of respondents expressed above average degree of satisfaction. Considerable number of respondents said they would take the furniture when moving to other places.

1.2.5 Entrance hall

The survey shows that a significant portion of respondents considers entrance hall too narrow, although they are quite satisfied with the function. About half of the respondents are content with storage capacity in entrance hall while another half are not.

In terms of storage in entrance hall, a higher proportion of respondents complained that entrance hall is not spacious enough to arrange things. Therefore, to solve the storage problem in entrance hall, a more systematic storage system is required rather than making the entrance hall bigger.

In most cases, shoes cabinet is the only furniture placed in entrance hall and it is perceived as a must by respondents. And as to the use and design of a shoes cabinet, it is indicated that most

respondents are content, however, they said that they will dispose of it or leave it there when moving to other places. Since a shoes cabinet is usually built-in type in entrance hall. Umbrellas, tools, sports goods, and others are stored in shoes cabinet as well as shoes, which indicates that a more systematically designed cabinet is needed in entrance hall.

1.2.6 Spaces for multi-purposes

Respondents are satisfied with the use of this area, however, a high percentage of them are discontented with the size. As to the storage, slightly more than half respondents expressed satisfaction.

Storage-related problems of this area include shortage of space and not systematically designed storage furniture. The biggest number of respondents replied that more systematic storage furniture is needed to solve the problem. The area is usually equipped with washing machines machine and shelves indicating that it is mainly used to do laundry.

A washing machine in this place is considered as a must by the majority of the respondents. Most respondents are satisfied with the use of washing machines and expressed above average degree of satisfaction about the design. They also said that they would take machines with them when moving to other places. And items placed on the shelves include much household stuff.

1.2.7 Store room

Inside storeroom, there is usually either shelves or built-in closets. According to the survey, respondents are quite satisfied with the use of the space, but they think this area is relatively small. About the storage capacity, half of the respondents expressed their satisfaction while the other half expressed dissatisfaction. And the main reasons for the dissatisfaction are that this area is too small, storage furniture is not systematically designed, and they just have too many things to store.

The biggest portion of the items placed in this area is expendable supply including detergent, toilet paper, and other miscellaneous goods. And sports goods are next followed by small electronic appliances, bags, and kitchen utensils.

1.2.8 Veranda

It is indicated that majority of the respondents are relatively content with the use and the size of veranda. However, a significant number of respondents replied that it is not spacious enough.

The survey shows that the respondents are quite content with the storage of veranda. More respondents complained about storage furniture than limited space. The main reasons for their dissatisfaction include the facts that there are not enough pieces of storage furniture in veranda and they are not systematically designed. Therefore, to improve storage capacity in veranda, the space needs to be bigger and requires more systematic storage furniture.

There are usually clothes racks, plants, jars and pots placed in veranda. Which means veranda is used as a place to dry laundries, raise plants, and store food. Many respondents stressed the necessity of clothes rack, however, they expressed dissatisfaction about the design saying that they will dispose it or leave it there when moving to other places. When there are two verandas in an apartment, residents tend to use veranda 2 as a storage place or to dry laundries.

1.3 Characteristics of activities shown in each space

According to the survey, people tend to use bedroom No. 1 mainly as a place to sleep, take a nap or rest, contemplate, put on make-up, and change and arrange clothes. And the second most frequent activities in bedroom No. 1 include handling clothes, sewing, reading, keeping household accounts, sorting out receipts, watching TV, and ironing.

In bedroom No. 2, the most frequent activities are sleeping, changing and arranging clothes just like the ones carried out in bedroom 1. But, unlike bedroom No. 1, bedroom No. 2 is more frequently used for children related activities. Parents take care of children and talk with children in this room. Children also use this room when playing. It is indicated that bedroom No. 2 is used for children. Bedroom No. 3 shows very similar distribution of activities with bedroom No. 2. Activities in living room include watching TV, entertaining guests. Activities carried out in living room indicate that this place has various functions such as a reception area, family's get-together, and a place to take care of household affairs.

1.4 Analysis of main household products

According to the survey, 84.7% of the total households have more than one computer showing the wide spread of computers. It is indicated that eldest child of a family is the main user, however, a significant number of other family members such as husbands, other children, and wives use computers as well. Which means that a computer affects family in their life style. And the survey also shows that many children do video games and DDR.

1.5 Characteristics of seasonal goods and items not frequently used

As to the clothes, many replied that they change storage places according to seasons or keep clothes they don't wear away in different places due to shortage of space.

1.6 Furniture possession patterns

When a couple uses bedroom No. 1, there are some patterns in possessing furniture such as 「closet, dressing table, bed, chest of drawers」, 「closet, dressing, table, bed」, and 「closet, dressing table, bed, chest of drawers, TV rack」, accounting for 16.7%, 13.3%, 9.0%, respectively. Especially, three patterns have closet, dressing table, and bed in common indicating that these pieces are the minimum common denominator of bedroom No. 1.

When children use bedroom No. 2, there are some patterns in possessing furniture such as 「desk set, bed, closet」, 「desk set, bed」, and 「desk set, bed, chest of drawers」, at 9.4%, 6.5%, 6.3%, respectively. The result shows that desk set and bed are the minimum common denominator in bedroom No. 2.

When children use bedroom No. 3, some patterns in possessing furniture similar to bedroom No. 2 such as 「desk set, bed, closet」, 「desk set, bed」, and 「desk set, bed, chest of drawers」 at 12.4%, 11.8%, 7.7%, respectively.

Common patterns shown in living room are 「recreation, sofa, chest of drawers, table, air-conditioner」, 「recreation, sofa, chest of drawers」, and 「recreation, sofa, chest of drawers, table」, accounting for 11.0%, 9.1%, 8.6%, respectively. In living room, recreation-related furniture(TV rack, audio set rack), sofa, chest of drawers are the minimum common denominators.

1.7 Furniture possession depending on living expenses and regions

The survey shows that there is a significant difference in case of closet and bed according to regions and living expenses. It is also indicated that there is a significant difference among places of residence in the holdings of dressing table, computer desk, book shelves, built-in closet, hanger, and wall mountable air-conditioner, and depending on living expenses in the holdings of desk, side table, standing type air-conditioner.

2. Summary

By summing up the results of the study, following can be suggested.

First, when planning a living space, ground plan of a housing facility plays the most important role by being able to reflect residents' characteristics and life style properly. Housewives in a 3-bedroom apartment in the capital region are mostly in their 30s and 40s and have two children with eldest child in elementary school. Therefore, the number of bedrooms seems to be proper for this type of family. However, many respondents complained about shortage of space and storage capacity. Which indicates that there are problems related with standardized apartment buildings designed regardless of characteristics of residents as well as limited space. Therefore, it is urgent that family life patterns should be taken into consideration when ground planning 3-bedroom apartment in the capital region in the future.

Second, problems related with storage are basically due to physical properties of an apartment such as shortage of space or non-systematic storage furniture, therefore, these problems can be solved only by developing a new storage system. The smaller bedroom, the more complaint respondents have about shortage of space. However, making a bedroom bigger means another space having to be smaller putting the situation in a dilemma. So, an innovation of a ground plan is needed. As the importance of efficient storage system is stressed, a development of a better storage system is strongly required.

Third, as to the patterns in home renovation and improvements, majority respondents tend to remodel various spaces simultaneously, before moving into new places. They mainly change finishing materials. And they plan to remodel only necessary spots when moving to other places later, which indicates that remodeling a specific part is suggested as an efficient alternative to solve problems caused by shortage of space.

Fourth, to determine patterns in possessing furniture, we grouped activities corresponding with furniture according to main functions of each space. As a result, bedroom No. 1 is classified as a main store room/make-up/ancillary store room/recreation and leisure/working/rest and conversation/climate controlling. And as for the most common patterns shown in furniture possession in bedroom No. 1 are 「closet, dressing table, bed, chest of drawers」, 「closet, dressing table, bed」, and 「closet, dressing table, bed, chest of drawers, TV rack」. Bedroom No. 2 and 3 are mainly used for children and identified as places for studying/sleeping/main store room/ancillary store room/recreation/make-up. 「Desk set, bed, closet」, 「desk set, bed」, 「desk set, bed, chest of drawers」 are the common patterns of furniture shown in bedroom No. 2 and 3. Providing a place for a family to get together and many other purposes, a living room has more varied functions. Activities carried out in living room are identified as recreation and leisure/rest and conversation/store room/controlling environment/working. And 「recreation, sofa, chest of drawers, table, air-conditioner」, 「recreation, sofa, chest of drawers」, and 「recreation, sofa, chest of drawers, table」 are the common patterns shown in living room furniture.

Fifth, There is still a very clear boundary among spaces in terms of functions. That is, a space has one's own functions. However, the survey shows that a space, which was once used only for specific functions, is now being opened to various activities.

Since a room is used for various activities, now a boundary among different spaces are disappearing and there is a high demand for innovative ideas and new countermeasures in ground planning. Especially, according to the results of the survey, a living room has more various functions than other spaces. Patterns shown in living room furniture are quite different from others reflecting facts that climate controlling function of a living room is given much weight and other various activities, which include recreation, taking a rest and talking with others, decoration and storage space, take place in a living room. A living room also provides a space to perform activities that can not be done in children's room due to shortage of space. For instance, computer can be placed in other areas such as living room when the children's room is not spacious enough and allow activities in living room more various. Bedroom No. 1 basically provides a space to sleep, put on make-up, and keeps or store things. But it is used for activities such as recreation and working, which indicates that bedroom No. 1 bears more various and comprehensive functions. In bedroom No. 1, there is also furniture used when taking a rest and talking with others, and climate controlling. It shows that bedroom No. 1

adds more functions than before and there is a high demand to increase quality of this room. Therefore, innovative ideas are required to carry out these comprehensive activities more efficiently in a living room.

Sixth, it is indicated that people use a bathroom when putting on make-up or taking care of children as well as the original functions. Families in a 3-bedroom apartment usually have children to take care. Therefore, a dry space in a bathroom to take care of children safely should be taken into consideration.

And finally, depending on living expenses and places of residence, it is indicated that there is some difference in possessing furniture. We found out some furniture is considered as minimum common denominator regardless of income or a place of residence, while others are required out of necessity or other reasons by users. And the results in this part should be used in full scale to develop furniture design.

Based on the results of the study, we would like to suggest some recommendations for future research of this nature.

1) By asking respondents to fill out the questionnaire, we found out what kinds of furniture and how many pieces are placed in each space, but we couldn't discover details of household products such as types and volume. Since each family has about 20,000 household products, it is recommended to do on-the-spot-survey.

2) The study examines functions and storage capacity of each space in a 3-bedroom apartment in the capital region. It also deals with what kind of household products are used and stored in each space. However, since the study is limited to families residing in 3-bedroom apartment in the capital region, more research should be performed to build database to determine storage patterns of Koreans.