LOWLAND TECHNOLOGY INTERNATIONAL Vol. 15, No. 1, 38-44, June 2013
International Association of Lowland Technology (IALT), ISSN 1344-9656

PREFERENCES AND CONSTRAINTS REGARDING MOVING TO A FINAL RESIDENCE: A CASE STUDY IN HITACHI CITY, JAPAN

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ABSTRACT: Some researchers have argued that a majority of Japanese have a strong desire to continue living in their current residence. This study hypothesized that some of these individuals, however, may well have a strong desire to change residence when they consider the actual requirements for receiving nursing care in the future. This paper, then, investigates preferences for and constraints on moving to a final residence, given the necessity of nursing care. The data are based on a questionnaire survey conducted among inhabitants of detached houses in suburban Hitachi City which is one of the typical suburban cities in Japan. A McNemar's test and correspondence analysis showed that less than 25% of the inhabitants were relatively certain that they would continue living in their current house in the future, whereas most were likely to change their residence whether they wanted to do or not. Furthermore, the inhabitants faced the necessity of compromising in the selection of their future residence (whether or not this involved a change of residence) due to a sense of being undeserving or out of consideration for their children.

Keywords: Final residence, nursing care, constraint factor, questionnaire survey, Hitachi City.

INTRODUCTION

With people aged 65 or more accounting for approximately 23% of the Japanese population, the nation's social system must adapt to an aging society if its citizens are to enjoy peace of mind for the duration of their lives. Given that improvements in social infrastructure require medium- and long-term strategies, the implementation of housing management and regional policy must be expedited from the early planning stages. Under these circumstances, central and local governments are advancing measures to facilitate the movement of elderly people to central urban areas, in order to secure accessible means of transportation and efficient health care services. According to the results of previous questionnaire surveys regarding preferences for change of residence, however, it is clear that the majority of Japanese have a strong desire to continue living in their current residence (e.g., Cabinet Office, 2010; Ministry of Land, Infrastructure, Transport and Tourism, 2008).

Numerous studies have examined personal preferences regarding residential environment (e.g., Ueno, 1999; Tone and Asami, 2007), and some have investigated willingness and need to change one's place of residence (e.g., Ishikawa and Tamura, 2008; Tanaka and Yuzawa, 2010a, 2010b; Morita *et al*., 2010; Tsukai and Kuwano, 2010; Takatsuka and Izumi, 2008). Some studies have investigated the relationship between willingness to change residence and preference for nursing care service (e.g., Sawaoka, 2003; Son *et al*., 2004; Kato and Ueno, 2007). The results of the above studies may be summarized as follows: despite the fact that a majority of Japanese hope to continue living in their current residence, the older they are, the more they tend to be dissatisfied with their current residential environment; although some Japanese desire to change residence, the majority hope to receive home-visit nursing care in their current house in the future; it is possible to increase the number of elderly inhabitants of central urban areas by removing constraints on moving and/or publicizing positive information concerning the lifestyles of those living in such areas.

From the above results, it was inferred that the respondents who answered the respective surveys regarding preferences for residence did not consider the possibility that their old age may be of considerable duration. However, when people actually consider the specific circumstances involved in receiving necessary nursing care in the future, some may well have a strong desire to change residence. It is further hypothesized that many people in such a situation face a variety of constraints either on selecting their new residence or actually effecting the change. In order to achieve sustainable urban environments, it is critically important for the Japanese government to examine the provisions

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Note: Discussion on this paper is open until December 2013

for nursing care service for the elderly, and to articulate the vision of a beneficial residential environment. To accomplish this goal, we must define the limitations and possibilities involved in the respective consideration of a change of residence.

The purpose of this study, therefore, is to investigate individuals' preferences for their "final residence", defined as the dwelling in which a person expects to live until the last moments of his/her life. The study analyzes data collected from inhabitants residing in detached houses in a suburban area. More specifically, it aims:

- to examine the gap between feasible and desirable final residences;
- to explore the possibilities involved in such changes of residence;
- to reveal the constraints typically associated with different sorts of desirable residence.

METHODS

Overview of the Study Area

The study was conducted in Hitachi City, which is one of the typical suburban cities in Japan located on the Pacific Ocean in Ibaraki Prefecture (Fig. 1). The metropolitan area occupies 225.55 km^2, or 3.7% of Ibaraki Prefecture's surface area. The city's population was 193,129, as of the national census on October 1, 2010. Like Japan as a whole, the city is currently facing a dwindling and aging population, and declining birthrate. Because it developed as a company town, large-scale factories dominate the lowland in Hitachi City, and many residents reside in the tract housing developments of the upland area (Muramoto, 2007). The downtown area has experienced urban decay due to increased vehicular traffic related to urban sprawl. But while the government has made efforts to revitalize the downtown core, suburban areas have been neglected, and as a result, many route buses, restaurants and shops have withdrawn from these areas, making it very difficult, for the elderly living there who do not own a vehicle, to sustain a customary standard of living (Hitachi City Government Office, 2010).

Fig. 1 Location of Hitachi City in Japan

Data Collection and Measurements

Survey questionnaires were distributed to inhabitants (only family nurturers) residing in detached houses in suburban Hitachi City, from December 2 to 13, 2010. In total, 1,000 questionnaires were distributed, and a total of 776 questionnaires were returned. After eliminating 33 incomplete questionnaires, 743 valid surveys remained for analysis, yielding a response rate of 74.3%.

The first section of the questionnaire asked respondents for their age, gender, employment status, and years of residence in the respective house; and the second section asked the three questions shown below. More specifically, participants were asked for both a desirable final residence and a feasible final residence, in the event that they need nursing care. At this time the respondents were shown nine options for the selection of a final

Questionnaire

In the event that you need to receive nursing care in the future:

Q1. Which is the most desirable option? (Select from Table 1)
Q2. Which is the most feasible option in your current circumstances? (Select from Table 1)
Q3. What factors made you give a different answer to Q2 than Q1? (Select a maximum of 3 out of the 8 items.)

1. *Difficulty in amassing sufficient funds*
2. *Consideration for your son/daughter*
3. *Difficulty in disposing of your current house and land*
4. *Restrictions on admission to the desirable facility*
5. *Difficulty in finding a suitable house*
6. *Lack of physical strength*
7. *Concerns regarding your son/daughter's ability to understand the difficulties involved in choosing a final residence.*
8. *Other* _____

Table 1 Options for final residence, and specifications

Option		Specifications
1	Final residence: Current House	・You continue living in your current house and spend the rest of your life there. ・You receive home-visit nursing care.
2	Final residence: Another House (own house)	・You move to another house to spend the rest of your life. ・You receive home-visit nursing care there.
3	Final residence :Your Son/Daughter's House	・You move to your son/daughter's house and spend the rest of your life there. ・You receive home-visit nursing care and/or your son/daughter's assistance.
4	Final residence: Nursing Facility	・You move into a nursing facility and spend the rest of your life there. ・You receive nursing care and assistance around the clock, by nurses fully equipped with necessary technologies.
5	Final residence: Rental Unit in a House Devoted to the Elderly	・You move into a rental unit in a barrier-free house devoted to the elderly, to spend the rest of your life. ・The primary requirement for admission is that you require little in the way of nursing care. However you are eligible to receive assistance from care workers in emergency situations.
6	Next residence: Rental Unit in a House Devoted to the Elderly Final residence: Your Son/Daughter's House	・You move to your son/daughter's house to spend the rest of your life, after having moved into a rental unit in a house devoted to the elderly to live without nursing care. ・You receive home-visit nursing care and/or your son/daughter's assistance.
7	Next residence: Rental Unit in a House Devoted to the Elderly Final residence: Nursing Facility	・You move into a nursing facility to spend the rest of your life, after having moved into a rental unit in a house devoted to the elderly to live without nursing care. ・You receive nursing care and assistance around the clock, by nurses fully equipped with necessary technologies.
8	Next residence: Your Son/Daughter's House Final residence: Nursing Facility	・You move into a nursing facility to spend the rest of your life, after having moved to your son/daughter's house to live with your son/daughter. ・You receive nursing care and assistance around the clock, by nurses fully equipped with necessary technologies.
9	Other	-

Table 2 Definition of the terms in this study

Term	Definition
PAD (Participants' answer to the desirable)	Participants' answer to Q1 (desirable residence as a final residence in the event that they need nursing care).
PAF (Participants' answer to the feasible)	Participants' answer to Q2 (feasible residence as a final residence in the event that they need nursing care).
D-group (Difference group)	The group of participants who had different answers to Q1 and Q2.
ND-group (No difference group)	The group of participants who had the same answers to Q1 and Q2.
Constraint factor	Participants' answer(s) to Q3 (the reason(s) for the difference between their answer to Q1 and the answer to Q2).

residence (Table 1), to enable them to more accurately imagine the situation. In designing the nine options, five types of residences, considered strong candidates for a final residence that included nursing care service, were chosen (the current house, a different house, a son/daughter's house, a nursing facility, a rental unit in a house devoted to the elderly). The survey also asked respondents who had different answers to Q1 and Q2, the reason(s) for the difference. The definitions of key terms in the study are shown in Table 2.

Analytic Approach

The analytical method employed in the study combined McNemar's test with correspondence analysis (CA). Differences between PAD and PAF were analyzed using McNemar's test, a non-parametric test that compares two correlated proportions and produces a chi-square test statistic with one degree of freedom. For each test, a p-value < .001 indicated a statistically significant difference. Next, CA was used to investigate associations

between PAD and the constraint factors. CA is an exploratory data analysis technique enabling the graphical display of contingency table and categorical data. The points are plotted so as to visualize the associations among the variables. This graphical representation is called a CA map. Using the CA map, we may discover and evaluate associations among row and column elements. The proximity of a given pair of points is used to evaluate the underlying association between the points, with proximate points revealing a strong and distant point a weak, association.

RESULTS AND DISCUSSION

Description of the Sample

Table 3 presents the characteristics of the respondents, including age, gender, employment status, and years of residence in the respective house. Males (69.9%) outnumbered females (29.5%). In terms of age, the largest percentage of respondents (41.0%) were 70-79 years of age, followed by 60-69 years of age (29.3%), and the average age (± S.D.) was 66.8 ± 11.3 years. In terms of employment, the largest percentages (53.2%) had retired, while the second most prevalent group were homemakers (16.7%), and followed by office workers or public employees (15.1%). In terms of residence, the largest percentage (43.1%) had resided in Hitachi City for 30-39 years, followed by 40 years or more (29.3%). The overall results showed that the greatest part of respondents were elderly, retired, and long-time residents of the city, a typical profile for suburban tract housing developments in Japan.

Table 3 Characteristics of the participants

Characteristic	N	%
Gender		
Male	519	69.9
Female	219	29.5
No response	5	0.7
Age (years)		
<49	72	9.7
50-59	76	10.2
60-69	218	29.3
70-79	305	41.0
80 +	56	7.5
No response	16	2.2
Employment status		
Office worker or public employee	112	15.1
Self-employed or free-lance	36	4.8
Part-time employee	38	5.1
Homemaker	124	16.7
Retired	395	53.2
Other	28	3.8
No response	10	1.3
Years of residence in the respective house		
<10	69	9.3
10-19	57	7.7
20-29	69	9.3
30-39	320	43.1
40 +	212	28.5
No response	16	2.2

Preference for Final Residence

Table 4 shows the distribution of PAF and PAD. With regard to PAF, the largest percentage of participants (36.1%) selected Option 1, followed by Option 4 (23.1%). With regard to PAD, the largest percentage of participants (29.7%) selected Option 1, followed by Option 4 (14.3%). McNemar's test showed significant differences between PAF and PAD in the case of Option 1 ($p < .001$), Option 4 ($p < .001$), Option 5 ($p < .001$), Option 7 ($p < .001$) and Option 8 ($p = .002$); and showed no significant difference in the case of Option 2 ($p = .112$), Option 3 ($p = .176$) or Option 6 ($p = .424$). In addition, in the case of Options 1 and 4, there was a higher percentage of PAF than PAD responses; while in the case of Options 5, 7 and 8, the order was reversed. These results suggest that "Current House" and "Nursing Facility" are popular with participants as prospective final residences; nevertheless, there is some demand for Options 5, 7 and 8. The selections of a feasible residence are very limited.

Table 4 Distribution of PAF and PAD (Results include 602 samples, but do not include missing, 'No response', or 'Other' values).

Option	PAF	PAD
1	36.1%	29.7%
2	4.7%	6.7%
3	3.5%	4.7%
4	23.1%	14.3%
5	4.4%	8.6%
6	0.8%	1.3%
7	5.7%	12.4%
8	3.2%	6.5%

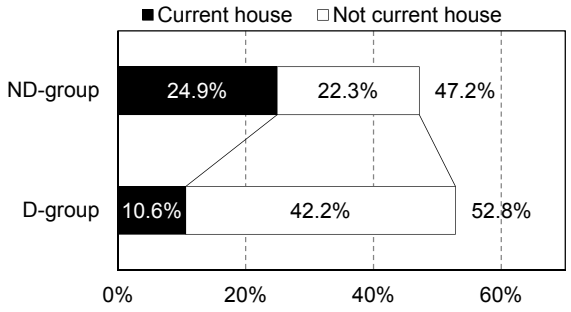

Fig. 2 Proportion of ND-group and D-group

As shown in Fig. 2, the D-group accounted for 52.8% of all participants, and the ND-group for 47.2%. ND-group participants who selected "Current House" (Option 1) accounted for less than a quarter of all respondents. Fig. 3 illustrates the frequency of the D-group's constraint factors, and shows that the most common constraint factor was "Difficulty in amassing sufficient funds" (54.4%), followed by "Consideration for your son/daughter" (52.5%). The least common constraint factor was "Concerns regarding your son/daughter's ability to understand the difficulties involved in choosing a final residence" (2.0%). These results suggest that less than 25% of the participants are relatively certain that they will continue living in their current house in the future, and approximately 53% are unsure of their future residence. Furthermore, 22.3% will probably change their residence principally on the grounds of financial or familial relationship concerns.

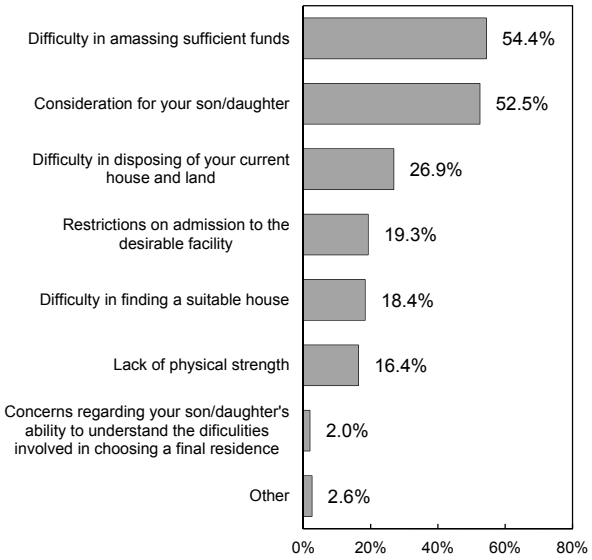

Fig. 3 Frequency of the constraint factors for the D-group

Associations between Desirable Residences and Constraints

Associations between the types of desirable residence and related constraints are of great importance for determining constraints on selecting types of residence. Table 5 presents a contingency table relating the constraint factors to the PAD of D-group. Fig. 4 shows a two-dimensional CA map of Table 5 illustrating the associations between PAD and related constraints. The total inertia of the table is 0.1997, of which 81.2% is illustrated in this map. The CA map suggests the following:

a) Options 2, 4, 5, 7 and 8 appear to form a cluster in the top right corner, and these options are in close proximity to four factors (Factors 1, 3, 4 and 5). For the reasons mentioned above, Options 2, 4, 5, 7 and 8 have similar characteristics in that participants must change their residence for a new one. Therefore, respective participants typically face constraints such as "Difficulty in amassing sufficient funds", "Difficulty in disposing of your current house and land", "Restrictions

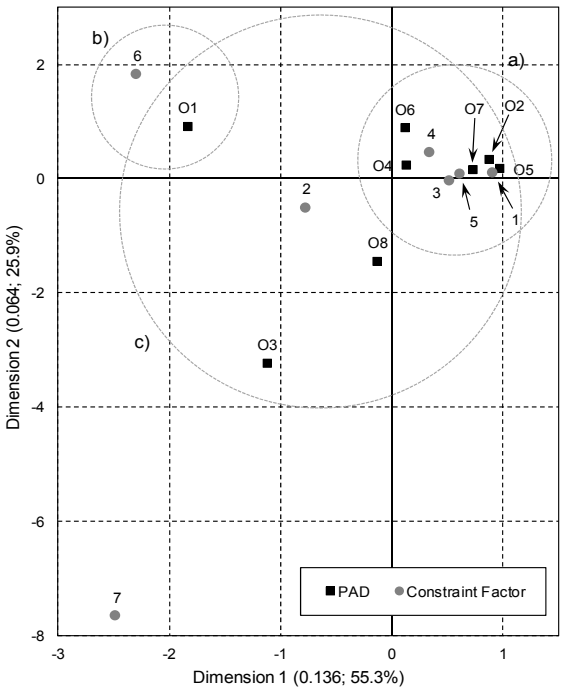

Fig. 4 Two-dimensional CA map of Table 5

Table 5 Contingency table relating the constraint factors and the PAD of D-group

	PAD							
Constraint factor	1	2	3	4	5	6	7	8
1. Difficulty in amassing sufficient funds	13	21	6	26	33	4	46	14
2. Consideration for your son/daughter	39	7	13	28	15	3	28	24
3. Difficulty in disposing of your current house and land	9	12	4	16	14	2	16	8
4. Restrictions on admission to the desirable facility	8	2	1	13	7	3	19	6
5. Difficulty in finding a suitable house	6	2	2	9	16	3	11	6
6. Lack of physical strength	26	3	2	7	3	2	4	1
7. Concerns regarding your son/daughter's ability to understand the difficulties involved in choosing a final residence	1	0	3	0	0	0	0	2

on admission to the desirable facility" and "Difficulty in finding a suitable house", when considering, as future residences, "current house", "nursing facility" or "a rental unit in a house devoted to the elderly".

b) Option 1 is proximate to Factor 6, suggesting that due to "Lack of physical strength" it may be difficult to continue living in the current house. Perhaps participants do not feel confident enough to continue living in their residence due to concern about receiving nursing care there.

c) The options as a whole form a rough circle around Factor 2, and Options 3, 6 and 8 appear to be particularly proximate to this factor. It follows that the respective participants must compromise in the selection of their future residence (whether or not this involves a change of residence) due to a sense of being undeserving, or out of consideration for their son/daughter, to whom they may fear being a burden (however much they may, in fact, wish to live with them).

CONCLUSION

The present study examined preferences for a final residence given the necessity of nursing care. The following were the main findings.

(1) Participants were most likely to select their "Current House" as their final residence; however, the residences (including this one) that they selected as desirable often differed appreciably from the feasible residences in their situation.

(2) Less than 25% of participants were relatively certain that they would continue living in their current house in the future. Those who desired to change their residence faced various constraints; and a lack of confidence in their ability to receive nursing care in their current house induced anxiety about their future residency.

(3) Participants often faced the necessity of compromising in their selection of a future residence (whether or not this involved a change of residence) due to a sense of being undeserving or out of consideration for their son/daughter.

On these grounds, it was inferred that, contrary to the results of previous questionnaire surveys, most Japanese are likely to change their residence whether they want to or not, and have a wide-ranging demand for a final residence. Thus, it may be said that there is significant potential demand for changing residence. However, realistically, roughly half of the study participants find themselves in circumstances forcing them to forego the opportunity of living in a desirable residence, due to certain constraints. Especially their large constraints are financial issues and family relations. Although the Japanese governments are trying to solve especially their financial issues to facilitate the movement of elderly people to central urban areas, we have no way to think proposal with disregard of family relations. Judging by the result of this study, the immediate needs are to reveal suitable places and ways they can keep an appropriate distance, which has the meaning of both psychological distance and physical distance, from their sons/daughters rather than to reveal a way to live with their sons/daughters. It seems that the countermeasures against their financial issues can work well only by the above solution. Hence, structural changes in Japanese society, which expand the range of choices in selecting a final residence, and efficiently respond to diverse needs, are required; and additional studies, in other contexts, investigating individuals' attitudes toward selecting a final residence, are strongly recommended.

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