

RESEARCH ON THE FORMATION OF URBAN RESIDENTIAL LIFESTYLES THROUGH CASE STUDIES OF LOWLAND CITY SAGA AND NON-LOWLAND CITY KITAKYUSYU

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ABSTRACT: In this paper, we firstly put forward the conception of residential lifestyles; and suitably questionnaire surveys were conducted in two cities of Japan- lowland city Saga and non-lowland city Kitakyusyu. Through the analysis of the questionnaire data, we got hold of the characteristics of residential preference patterns, residential emphasis on dwelling selection, as well as the evaluation on residential environment satisfaction. Furthermore, the comparison between the two cities helped to make clear the similarity and difference of the residential emphasis between lowland city and non-lowland city. The results of the research will not only be benefit to the understanding of the diversification of residential lifestyles, but also provide more information to the planning and developing of residential environment effectively and efficiently by understanding the residential preference, emphasis and demands of various patterns.

Keywords: Residential lifestyles, residential preference, residential emphasis, residential satisfaction

INTRODUCTION

Residential environment quality is one of the basic conditions for quality of life, as well as the main support for the activities of economy, culture and society. The improvement of residential environment quality has also become one of the main targets of city policy and urban planning.

Many researches have been performed on the concept, methodology and framework of the residential environment. Amerigo et al. (1997) presented a theoretical and methodological approach to the study of residential satisfaction, and gave a general view of the relationships established between a person and his residential environment. Smith et al. (1997) investigated the physical elements that contribute to the quality of a community, and established a framework for understanding the relationship between the quality of an urban environment and physical form, which aimed at bridging the gap between research and design and linking the two into a comprehensive framework. I. van Kamp et al. (2003) tried to construct a multidisciplinary conceptual framework of environment quality and quality of life for the advancing of the urban development, environment quality and human well-being. There also have been a lot of papers on the indexes and

methods for the evaluation of residential environment. Ric van Poll (1997) conducted several questionnaire surveys on the source of annoyance in urban residential environment. Bonaiuto et al. (2003) presented two instruments measuring the quality of the relationship that inhabitants have with their urban neighborhoods, consisting of 11 scales measuring the perceived environmental qualities of urban neighborhoods and one scale measuring neighborhood attachment. Marans (2003) described the subjective and objective indicators measuring the quality of community life. In Japan, there were also many researches which aimed at establishing residential environment indexes, such as studies in large cities like Tokyo and Kitakyusyu (Asami, 2001), as well as in local cities like Saga (Ge and Hokao, 2004). However, most of the researches focused on the general evaluation indexes and models by considering the common conditions of urban residents. Actually, in recent years, with the diversification of personal sense of values, as well as the abundance of lifestyles, people's demands on residential environment are also becoming more and more diversified. Accordingly, it is with great necessity to catch hold of the various residential lifestyles by considering the different residential preferences and the diversified demands on residential environment.

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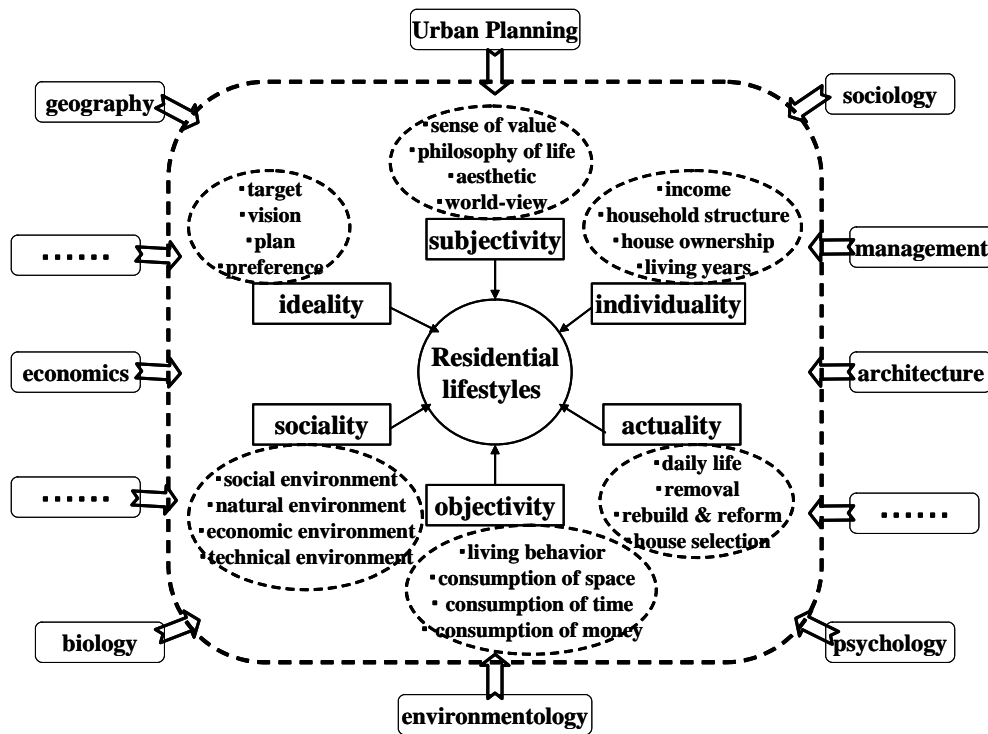


Fig. 1 Concept of residential lifestyles

This paper attempts to study urban residential environment from the perspectives of individualization and diversification instead of general index system and evaluation model. As such, the paper hopes to meet the following objectives: (1) to propose the conception of residential lifestyles as well as its structure and components; (2) to apply the concept to understand the diversification of residential lifestyles by making clear the residential emphasis of dwelling selection, residential preference patterns, as well as the evaluation on satisfaction of residential environment; and (3) to compare the residential emphasis influencing factors between Saga City and Kitakyusyu City to make clear the similarity and difference of the residential lifestyles between lowland cities and non-lowland cities. The results of the research will not only be benefit to the understanding of the diversification of residential lifestyles, but can also provide more information for the planning and developing of residential environment effectively and efficiently by understanding the residential preference, emphasis and demands of various patterns.

METHODOLOGY

Residential Lifestyles

In this research, residential lifestyle is defined as the way of life related to residence coming along with the

consumption of time, space and money; in other words, residential lifestyle is all of the lifestyle factors related to residence. The structure and components of residential lifestyles are very comprehensive and complicated, with very many influencing factors. Here, we propose the concept of residential lifestyles as shown in Fig. 1, which is considered to have three two-sided properties such as individuality and sociality; subjectivity and objectivity; actuality and ideality.

As to the property of *individuality*, residential lifestyle is the personal way of life influenced by the household structure, living condition, income level, living years and so on; as to the *sociality*, it is the phenomenon controlled by the social, economic, natural and technical environment. As to the *subjectivity*, residential lifestyle is decided by such subjective factors as philosophy of life, sense of value, aesthetic, world view and so on, expressing mainly by the preference to residential environment; as to the *objectivity*, residential lifestyle is directly related to the concrete living behavior through the consumption of time, space and money. As to the *actuality*, residential lifestyle is expressed in the everyday life, living behavior, removal, reform/rebuild, house selection and so on; as to the *ideality*, residential lifestyle also included the ideal, vision, plan or target of the perfect residence. Because the concept of residential lifestyles is very complicated and comprehensive, the multi-dimensional, interdisciplinary and dynamic research approaches are needed.

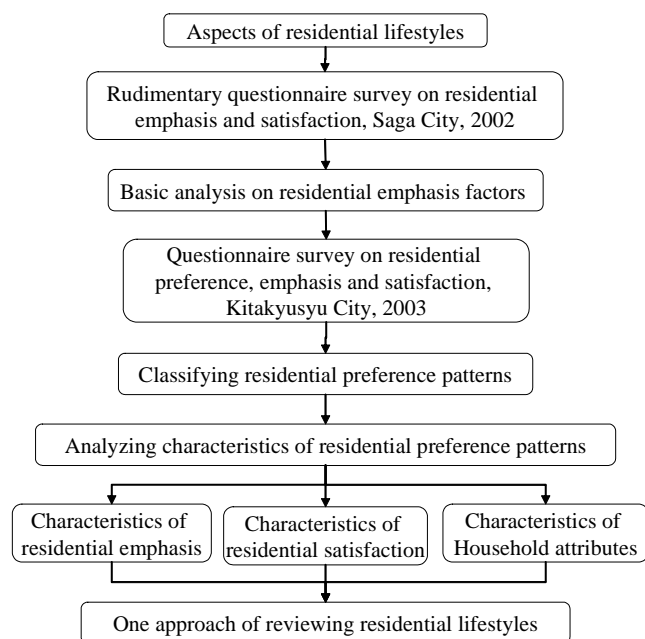


Fig. 2 Flowchart of the research

In this research, on the basis of the understanding of residential lifestyles and its influence factors, we firstly aimed to interpret the concept through the approach of urban planning as the initial step. Among the factors we presented in Fig. 1, we focus on the residential preference, residential emphasis on housing selection, and residential satisfaction as well as the individual attributes such as age, housing ownership, household structure and living years etc. The flowchart of the research is shown in Fig. 2.

Study Areas

Saga City, as the capital city of Saga Prefecture, is the center of politics, economy, culture and activities; however, it is a small local city with uniform and plain land features, abundant garden landscapes, as well as an abundance of water networks spreading all over the city. Its population is about 164,000. In all, it is a typical lowland city. In such kinds of lowland cities with little variation in topographic features of topographic features, the residential lifestyles are assumed to be more dependent on the subjective preference rather than influenced by objective conditions. Therefore, the selection of lowland city as our research subject is considered suitable as the first step to simplify the structure of residential lifestyle by reducing the regional and geographic components. It could help us to understand the subjective nature of residential lifestyle. On the other hand, Kitakyusyu is an industrial city with large spatial scales. It is the second largest city in the Kyushyu area with the population over one million.

Table 1 Samples and response of the questionnaire Survey (Saga)

	Area	Household Number	Delivery Number	Response Number	Response Rate (%)
Urban area	Kanko	2,725	270	144	53.3
	Akamatsu	3,696	250	117	46.8
	Kaisei	3,405	240	127	52.9
	Hyogo	3,291	250	135	54.0
Suburb	Kubozumi	1,447	170	65	38.2
	Morodomi	3,585	244	161	66.0
	Yamado	6,620	460	213	46.3
Overall		24,769	1884	962	51.1

There is a large variation in the topographic features of the city. There are farms on the plain, areas surrounded by bays, gulfs or sea, mountainous areas, and also sloped areas. We have assumed that residential lifestyles are influenced by different land features, which can help us understand the nature of residential lifestyle more comprehensively. Accordingly, the above two cities with lowland and non-lowland properties are selected: firstly, a rudimentary questionnaire survey was performed in lowland Saga City in order to catch hold of the subjective influencing factors of residential emphasis; secondly, another questionnaire survey was conducted in Kitakyusyu City, where there are a lot of different characteristics of residential forms, in order to clarify the general patterns of residential lifestyles. Furthermore, the comparison of the two cities can also let us understand the different residential emphasis factors of lowland city and non-lowland city.

SURVEY AND ANALYSIS ON RESIDENTIAL EMPHASIS – CASE OF LOWLAND CITY, SAGA

Questionnaire Survey

From October through December 2002, a rudimentary questionnaire survey was performed in five residential areas of Saga City and two residential areas in the towns around Saga city. Altogether 1884 householders were selected randomly and sent a questionnaire. Table 1 shows the sample numbers and response ratios in each residential area. The questionnaire was made up of 70 questions which were divided into three parts shown in Table 2.

Analysis on Residential Emphasis

Table 2 Structure of questionnaire (Saga)

Question Contents		Question Number
Individual Attributes	age, sex, occupation, time spent to job, family structure, living period, hobby, ownership, etc.	12
Residential Emphasis	residential emphasis of selecting dwellings	22
Satisfaction on Residential Environment	Safety	8
	Healthy	9
	Comfort	6
	Convenience	8
	Community	5

In the questionnaire, we asked the residents to evaluate the emphasis of the factors when they select their present housing. 22 items were listed and the residents were asked to evaluate the importance of each item with a 5-grade evaluation scale as 1(not important), 2(not so important), 3(intermediate), 4(important), 5(very important). We performed a Factor Analysis with Quartimax rotation on the evaluation scores by SPSS 12.0. Five components, which have the Eigen-value larger than 1.0, were abstracted as shown in Table 3. The percentages of variance of components are shown in Table 4. It could be seen that Factor-1 is the safety & comfort factor; Factor-2 is the convenience factor; Factor-3 is the leisure & entertainment factor; Factor-4 is the housing factor; Factor-5 is the factor of other reasons.

SURVEY AND ANALYSIS ON RESIDENTIAL PREFERENCE PATTERNS – CASE OF LOWLAND CITY, KITAKYUSYU

Questionnaire Survey

During October 2003 to January 2004, we performed a questionnaire survey in the following four districts of Kitakyusyu City: Kokura-kita (urban center), Tobata (plain residential area), Yahata (slope residential area), and Moji (tourist spot). The submitting and responding condition of the survey are shown in Table 5, and the contents of the questionnaire are shown in Table 6.

Analysis on Residential Emphasis Factors

According to the components we abstracted from the analysis of Saga City, we designed questionnaire of the emphasis of dwelling selection in more detail with total 42 items. Then a Factor Analysis was also conducted to the scores of these items, by the same method of case

Table 3 Component Matrix (Saga)

	Components				
	1	2	3	4	5
Safety from disasters	0.795	-0.012	0.001	0.072	0.052
Transportation safety	0.783	0.142	0.034	-0.004	0.131
Sunshine/ventilating	0.768	0.053	-0.097	0.189	0.010
Noise, vibration, stench	0.766	0.083	0.005	0.139	-0.066
Safety of criminals	0.756	0.081	0.121	-0.006	0.207
Cleanliness of streets	0.729	0.106	0.213	-0.026	-0.113
Enrichment of welfare facilities	0.609	0.298	0.182	-0.135	-0.090
Beauty of the cityscape	0.597	0.156	0.228	0.082	-0.351
Commuting convenience	0.244	0.795	-0.072	0.066	-0.017
Convenience of shopping	0.359	0.673	-0.007	-0.042	-0.158
Near to workplace	0.061	0.655	0.076	0.238	0.187
Children commuting convenience	0.327	0.645	-0.067	0.097	0.135
Convenient to other cities	0.362	0.530	0.102	-0.019	-0.184
Enjoying the local festivals	0.115	-0.014	0.779	-0.009	0.032
Good personal relationship	0.215	-0.039	0.736	-0.047	0.108
Attachment to the region	0.185	0.002	0.669	-0.082	-0.001
Enjoyment of leisure time	0.175	0.166	0.587	0.434	-0.092
Layout/construction of house	0.276	0.084	0.039	0.817	-0.008
Rent or price of house	0.131	0.219	-0.085	0.745	0.085
Near to parents/children	0.144	0.051	0.316	0.041	0.659
Abundant of nature elements	0.367	-0.020	0.269	-0.055	-0.473
Good educational environment	0.434	0.314	0.235	0.157	0.213

Table 4 Percentages of variance of components (Saga)

Component	Eigen - value	Percentage of Variance of Component (%)	Cumulative Percentage of Variance (%)
1 st	5.24	23.83	23.83
2 nd	2.56	11.63	35.47
3 rd	2.36	10.72	46.19
4 th	1.61	7.31	53.50
5 th	1.06	4.80	58.29

Saga. Then we deleted the items with the factor scores lower than 0.5, and conducted the Factor Analysis again.

Table 5 Responding condition of the questionnaire survey (Kitakyusyu)

District	Property	Number of households	Number of questionnaire delivered	Number of response	Response rate (%)
Kokura-kita	Down town Plain	88,651	312	154	49.36
Tobata	residential area	29,198	489	216	44.17
Yahata-higashi	Slope residential area	35,133	189	98	51.85
Moji	Tourist spot	49,972	134	73	54.48
Total	-	202,954	1124	541	48.13

Table 6 Contents of the questionnaire survey (Kitakyusyu)

Items	Question Number
Individual attributes	10
convenience	6
Satisfaction of comfort	6
residential healthy environment	6
safety	6
community	6
Importance order of residential factors	5
consumption of time	2
Residential preferences	3
consumption of space	3
consumption of money	2
social relationship	3
Emphasis of dwelling selection	42
Total	97

At last, there are five components obtained as shown in Table 7, while the percentages of variance of each component are shown in Table 8.

It could be concluded that Factor-1 is the housing factor; Factor-2 is the safety & comfort factor; Factor-3 is the convenience factor; Factor-4 is the leisure and entertainment factor; Factor-5 is the geographic factor. The first four factors are the same with that of Saga City, and can be proved as the common factors of urban residential emphasis as the house factor, safety & comfort factor, convenience factor, leisure & entertainment factor. The 5th factor found in Kitakyusyu is different from that of Saga. As we know Kitakyusyu is full of diversified geographic conditions such as slope, hill, seaside and plain, thus the appearance of the

Table7 Component Matrix (Kitakyusyu)

	Component				
	1	2	3	4	5
House area	0.781	0.016	0.122	0.056	-0.038
Number of the room	0.753	0.090	0.099	-0.003	-0.250
Type of the house	0.727	-0.084	0.026	0.096	0.208
Arrangement of the rooms	0.714	0.068	0.035	-0.022	0.108
Lot area	0.669	0.120	0.015	0.145	0.184
With or without garden	0.586	0.258	-0.065	0.229	-0.216
Ease of the housework	0.520	0.357	0.122	0.084	-0.074
Open-plan of the space	0.520	0.197	0.013	0.325	0.071
Safety from disasters	0.113	0.800	0.136	0.230	-0.076
Safety of criminals	0.161	0.743	0.202	-0.007	-0.020
Clean of the air	0.106	0.734	-0.047	0.212	0.264
Noise/vibration/stench	0.199	0.732	0.091	-0.079	0.262
Transportation safety	0.143	0.720	0.287	0.193	-0.119
Abundance of nature	0.071	0.566	-0.216	0.456	0.020
Convenience of transportation	0.087	0.125	0.817	0.094	0.080
Convenience of shopping	0.131	0.088	0.809	0.151	0.111
Commuting Convenience	0.129	0.126	0.809	-0.017	0.056
Convenience of welfare facilities	-0.001	0.382	0.575	0.243	-0.140
Consider of the hobby	0.347	0.111	0.027	0.681	0.076
Enjoyment of leisure time	0.078	0.171	0.137	0.665	0.029
entertainment facilities	0.122	0.045	0.355	0.656	-0.070
Vivaciousness of local activities	0.031	0.190	0.137	0.635	-0.041
Consider of the pets	0.147	0.021	-0.107	0.627	0.025
Geographic condition	0.173	0.302	0.232	0.042	0.737

Table 8 Percentage of variance of components (Kitakyusyu)

Component	Eigen - value	Percentage of Variance of Component (%)	Cumulative Percentage of Variance (%)
1 st	3.90	16.24	16.24
2 nd	3.73	15.55	31.78
3 rd	2.78	11.59	43.37
4 th	2.78	11.56	54.93
5 th	0.97	4.03	58.96

geographic factor is in accordance with what we assumed. Accordingly, the geographic factor should be taken into consideration in non-lowland cities, while in lowland cities, the geographic factor might not be so important.

Analysis on Residential Preference Patterns

Table 9 Evaluation items on residential preference and evaluation scale

Preference components	Choice on Left Side	very a neu- a very					Choice on Right Side
		much little	tral	little much			
		1	2	3	4	5	
①	urban						nature
②	emphasize job						emphasize daily life
③	leisure at home						leisure out of home
④	wide house						not wide is OK
⑤	emphasize building						emphasize environment
⑥	consider daily convenience						not consider daily convenience
⑦	spend money on residence						save money
⑧	prefer to buy home						prefer to buy others
⑨	interested in community						not interested in community
⑩	consider one's own family						consider parents
⑪	consider child education						not consider child education

In the questionnaire of Kitakyusyu, we also asked the residents to give their preferences on such 11 residential environment components as shown in Table 9 with 5-point scale. The answer should be the consciousness of preference, without considering the present living conditions.

We applied a Cluster Analysis to the data on the residential preferences via SPSS 12.0, and three clusters were obtained as the three patterns of the residential preferences, see Table 10. Then we calculated the average points and standard deviation of each component of Table 9 through each pattern, and the results are shown in Table 11.

Pattern-1 is the convenience urban preference pattern which prefers urban environment rather than nature; especially considers about the convenience factors. This pattern is willing to spend money on the satisfaction of residential environment and their consideration on residence is mainly focused on their own household, and the interest in community activities is the lowest.

Pattern-2 is the enjoying life and natural preference type, which prefers the residence site with plenty of nature; enjoys daily life rather than considering of job, emphasizes on the environment of residence rather than the housing itself, and the interest in the convenience is the lowest among the three patterns.

Pattern-3 is the community preference type. Their preference on convenience and natural factors are in the middle of Pattern-1 and pattern-2, however, they are considering more about community activities and personal relationship when considering about the residential environment.

Relation between Residential Preference and Emphasis of Dwelling Selection

We calculated the mean scores and standard deviations of emphasis of dwelling selection of each

Table 10 Results of Cluster Analysis

Cluster	Number	Percentage (%)
1	181	42.6
2	103	24.2
3	141	33.2
Total	425	425

Table 11 Average points and standard deviation on residential preference of each pattern

pattern	scores	Items										
		①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
1	mean	2.96	3.04	3.35	2.46	3.54	2.04	2.77	2.93	3.02	2.24	3.04
	S.D.	0.96	0.94	1.05	1.09	0.88	0.99	1.04	1.00	0.85	0.93	1.31
2	mean	3.59	3.32	3.70	2.47	3.78	2.21	3.18	2.73	2.90	2.22	3.77
	S.D.	1.22	1.34	1.31	1.36	1.07	1.29	1.37	1.36	1.18	1.04	1.21
3	mean	3.38	3.31	3.28	2.72	3.67	2.15	3.06	2.95	2.67	2.84	3.03
	S.D.	0.79	0.73	0.71	0.74	0.73	0.85	0.76	0.77	0.59	0.62	0.75
Total	mean	3.25	3.20	3.41	2.56	3.64	2.12	2.97	2.89	2.88	2.44	3.21
	S.D.	1.01	1.00	1.04	1.07	0.89	1.03	1.07	1.03	0.88	0.91	1.17

patterns, and the following characteristics have been obtained.

Pattern-1: When they selected the present housing, they emphasized most on the geography location, convenience to commute, good condition of transportation access, and convenience of shopping; while the consideration on personal relationship, plenty of natural elements, economic factors were quite weak. This is quite fit to their residential preferences.

Pattern-2: The considerations on the building itself were the strongest among the whole three patterns. For instance, the formation of the rooms, size, natural ventilation, ease of housework, open of the room have gained the highest importance evaluations. At the same time, the consideration on the surrounding environment such as noise, vibration, smell, abundance of nature, safety on transportation, disaster, criminal, education environment, recreation way of leisure time, and attachment to the area have been strongly emphasized. In all, the emphasis on the housings, environment, nature, and the enjoyment of life were higher than the other two patterns. On the contrary, the emphasis on convenience of shopping, commuting, and the ease of utility of recreation facilities were not so high.

Pattern-3: The emphasis on the building factors were almost the lowest among the three patterns. The

Table 12 Evaluation on residential satisfaction

Pattern	Evaluation Points					
		Convenience	Comfort	Healthy	Safety	Community
1	mean	3.98	3.06	3.11	2.64	2.90
	S.D.	1.02	0.87	0.88	0.78	0.61
2	mean	3.68	2.88	3.14	2.49	2.99
	S.D.	1.34	0.96	1.02	0.93	0.65
3	mean	3.70	2.98	3.10	2.57	2.92
	S.D.	0.96	0.78	0.87	0.78	0.54
Total	mean	3.81	2.99	3.11	2.58	2.92
	S.D.	1.10	0.86	0.91	0.82	0.60

consideration on the factors of environment, nature, safety and convenience were in the middle of pattern-1 and pattern-2. However, the emphasis on the human relationship and regional activities were the highest among the three patterns.

According to the above analysis, the emphasis on the residential environment factors while choosing houses of the three patterns are mainly consistent with their residential preferences, which means that the conscious to the residence are reflected by the behavior of the housing selection; while the behavior of housing selection is controlled by residential preferences.

Analysis on Residential Satisfactions and the Relationship with Residential Preference

In the questionnaire, we asked the residents to evaluate the satisfaction on their present residential environment, with the 5-grade scale from 1 (dissatisfied), 2 (a little dissatisfied), 3 (neutral), 4 (a little satisfied), to 5 (satisfied). The evaluation included 30 items which were divided into five parts of convenience, comfort, healthy, safety and community. The evaluation results are shown in Table 12 in terms of mean points and standard deviation.

Pattern-1 had the best evaluations on convenience. As we analyzed before, this pattern had the highest preferences on residential convenience in their conscious to residential environment, and at the same time, this pattern also emphasized more on the transportation convenience, geography location, shopping convenience than other two patterns when they selected their present houses. That the evaluation on convenience was the highest can be explained as the result of the realization of their residential preference and emphasis.

Pattern-2 had the lowest evaluation on residential convenience. This pattern considered the comfort of natural environment more than convenience, enjoyment of life more than working, and the preference on convenience was the lowest among the three patterns.

Furthermore, the same tendency could also be seen clearly when they selected their present house. Therefore, it could be said that the low evaluation on convenience is the result of the residential preference and emphasis. Nevertheless, the evaluation on comfort of this pattern was also the lowest among the three patterns. This result should well be taken into consideration. The preference on comfortable residential environment of this pattern was very strong, and this tendency could also be seen in their emphasis of housing selection, but their satisfaction on comfort was the lowest. This could be explained that their wish or expectation on residential environment have not been realized fully. It also can be said that the high expectation may bring about strict evaluation standards.

Pattern-3 had the middle satisfaction evaluation on almost all the items between pattern-1 and pattern-2, which accorded to the middle preference and emphasis of this pattern.

Analysis on Household Attributes

Age: The difference of age within each preference pattern is not apparent. However, the questionnaire was performed through the elementary schools so that the samples might be concentrated to the ages of 30~40; and thus the deviation of preference by age can not be seen clearly.

Household structure: Also because of the questionnaire conducting method, the samples might be concentrated to the household structure of nuclear family, so that the deviation of preference by household structure can not be seen clearly.

Housing ownership: Among all of the housing ownership types, the numbers of “own house” and “private rental house” are overwhelmingly large, in which the “own house” belonged to Pattern-1 more while belonged to Pattern-2 few; “private rental house” belonged more to Pattern-2 and Pattern-3, while few to Pattern-1. However the deviations are not so apparent.

Living years: The type of living years between 10 to 15 years belonged more to Pattern-1; and the type of living years above 20 years belonged more to Pattern -2. In Pattern-3, the difference of living years is not so obvious.

According to the above analysis, the deviations of household attributes such as age, household structure, ownership of the housings, living periods are not clear. However, the questionnaire was performed through the elementary schools so that the samples might be concentrated to the similar nuclear families. This defect should be overcome by enlarging the sample range with various ages, household structures and so on for the future research.

CONCLUSIONS

In this research, firstly we performed a questionnaire survey on the residential emphasis and satisfaction in Saga City as a rudimentary step. Saga is a small lowland local city without various topographic features so that we can simplify the complicated factors of residential lifestyles and focus on the subjective residential emphasis. Then on the basis of the findings of Saga City, we chose Kitakyusyu City with quite various land features to investigate the residential preference, emphasis and residential environment satisfaction, so that we can understand the residential lifestyles more comprehensively. The following results have been obtained through this research.

(1) We proposed the conception of residential lifestyles as well as its structure and components. It is considered to have three two-sided properties such as individuality and sociality; subjectivity and objectivity; actuality and ideality, and thus should be studied through multi-dimensional, interdisciplinary and dynamic approaches.

(2) We made clear the residential emphasis of dwelling selection, residential preference patterns, as well as the evaluation on satisfaction of residential environment in two Japanese cities:

(a) Three subjective residential preferences patterns were obtained: Pattern-1 is the convenience and urban preference pattern; Pattern-2 is the enjoying life and natural preference pattern; Pattern-3 is community preference pattern.

(b) The residential emphasis of housing selection is consistent quite well with the residential preferences, which means the consciousness on residential environment is reflected in the behaviors of dwelling selection, and in other words, the residential behavior is controlled well by the residential preferences.

(c) The evaluation on satisfaction of residential environment has shown that the evaluation on convenience was consistent well with the residential preference and emphasis of each pattern, but the comfort factor can not fit the residential preference quite well. The reason might be in two points, one is that the high expectation has made the evaluation standard more strict; the other one might be that comfort is a subjective attribute that is very different personally.

(d) The deviations of household attributes such as age, household structure, housing ownership and living periods are not apparent. However, the questionnaire was performed through the elementary schools so that the samples might be concentrated to the nuclear families with the similar ages; and thus the deviation of household attributes can not be seen. This defect should be overcome by enlarging the sample range with various

ages and household structures in the future.

(3) We have compared the residential emphasis influencing factors between the two cities to make clear the similarity and difference of the residential lifestyles between lowland cities and non-lowland cities. Five residential emphasis factors were abstracted both in Saga City and Kitakyusyu City, in which the first four are the same, and can be considered as the common factors of urban residents. They are the house factor, safety & comfort factor, convenience factor, leisure & entertainment factor. The rest 5th factor is different in the two cities. Kitakyusyu is full of diversified geographic conditions such as slope, hill, seaside and plain, thus the geographic factor appeared important. Accordingly, the geographic factor should be taken into consideration in non-lowland cities; while in lowland cities, the geographic factor might not be so important.

From this research, we studied the residential lifestyles from the perspectives of residential emphasis, residential preference and residential satisfaction. We have made clear the residential emphasis factors both of lowland city and non-lowland city; the various patterns of residential preference and the relationship with residential emphasis and residential satisfaction. The results of the research can contribute to the residential development and formulation or evaluation of policies related to residential development and housing.

In the future, the deeper and wider research of residential lifestyles and its relationship with residential environment satisfaction should be performed. As the concept we proposed in Fig. 1, residential lifestyles might be studied with the perspectives of individuality - sociality; subjectivity - objectivity; actuality - ideality in more detail in the future. Especially, the perspectives of sociality and objectivity should be taken into consideration in our future research. We are planning to study the residential lifestyles under the social, economic, natural, cultural and technical contexts. Furthermore, we propose to study the relation between residential environment and everyday behavior. The objective attributes of residential environment could also be analyzed by GIS (Geographic Information System). Furthermore, from the aspect of actuality of residential lifestyles, the research could further be applied to the promotion of citizen participation in the development, management and improvement of residential environment. Information from both the subjective and objective data, as well as the computer evaluation system of residential environment, could present effective and immediate support for citizen participation.

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