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The Nursery School Evaluation Services System with Child Care Household in a Resident Oriented Environment

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Abstract: From the questionnaire survey in Saga city and the Fukuoka city, this paper is paying attention to nursery school service evaluation of a child-rearing household. There is clarifies the evaluation axis and structure of the nursery school selection by a guardian, and aims at showing what kind of relation the intentionality of a place-of-residence preference and nursery school service evaluation. The result can be considered the investigation, personality, in different cities of scale, and there are differences in the needs of nursery selection of double-income households.

Keywords: Nursery School Services System, Child Care Household, Resident Oriented Environment, Cluster Analysis.

I. INTRODUCTION

Nowadays, the child-care environments have been changes while the social advance rate of womanand the diversification form of family are increased. The needs for the childcare environment diversifies of the lifestyle diversification and the problem are dramatically increased in the nursery school. Government are also supporting an important issues such as improve the Child Welfare Law, examine the revision of the nursery school childcare guidance, contain the enhancement of improvement, support the area quality of child-care development, develop the newly zero strategy of the child-care waiting-list, therefore *a national childcare meeting*[1] are strengthened an action about improvement of the quality of the childcare in the nursery school.However, this study is necessary to examine the way of the childcare service that is accepted intention and the lifestyle of the working with child-care household when the needs are diversified for the nursery school.

In the house environment and child-careof *Nami Y. and Moriaki H.* [3] studied, Hayakawa considered the feeling of satisfaction to the residence area of study and child care women which clarified the environmental element of the city. And Eiji Sato et al. [2] found a relationship with the easy childcare and association of the frequency of going out in conjunction with house environment and childcare.

Masayuki H. et al. [4] study about child-care and the balance of work relations. On the mentions nursery school maintenance and the balance of work relations, which is about the external environment of the nursery school institution and the relations of the childcare.*Ono H. and Omura K.*[5] said Matsuhashi arrests a park and the promenade outside the nursery school with local were beginning and clarifying about garden outside activity and the connection of area resources and mentions the importance of maintaining it around the institution. In addition, *Eiji S. et al.*' [2] study reveals on the relations of the family type about relations of the place of residence - nursery school - work location in working form. Moreover the place of residence choice of the double-income family, *Tomoko T. et al.* [13] clarify the demand for the place of residence varies according to the situation and a life stage of the living together with the parent. It is mainly analysed on a family form including the age of the child in that and is mentioned the distance to the workplace of the wife being important.

In the preference of study, the reason of residence choice and relation with the commuting time have been became clear, but there are a few examples that had connected with the needs of the childcare service. Therefore this studyare paid the attention to a nursery school service evaluation and watched an election relation to residence environment of the double-income family which was fond of character like as the different city of the scale in an example. We regard the variety as an evaluation of the needs for the nursery school service about nursery school choice by the parents as a type

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in that and am intended that clarify what kind of the intentional relation and the nursery school service also evaluate the place of residence choice enthusiast.

II. METHODOLOGY OF STUDY

The authorization nursery schools of Saga city (rural area) and Fukuoka city (urban area) were surveyed to clarify how became character and the needs of the parents in the different two local cities of the scale.

This study carried out questionary survey for the purpose of the measurement of the evaluation for the nursery school service. We choose ten items for an evaluation index of the nursery school service and analyse the potential needs that can be measured by a factor analysis from an answer to questionary survey, and clarify the general characteristic for the nursery school service. Moreover the questionnaire survey assumed it a respondent towards the parents of the child who went to the nursery school or the adult for it, and investigation cooperation carried it out by a visit custody method for eight provided institutions (three institutions in Saga city, five institutions in Fukuoka city).

In Table 2, during December 20th, 2011 to December 27th, 2011 in Fukuoka city, and to December 28th, 2011 in Saga city, the collection data of questionnaires are distributed. In addition, the attribute of the respondent is obtained from the questionnaire surveys shown in Table 2.

Table 1

Questionnaire distribution and the collection situation of Nursery School

Study Area	Number of the Distribution	Number of the Collection	Recovery
Saga City (Three institutions)	348	197	57%
Fukuoka City (Five institutions)	506	215	42%

Table 2

Attributionof respondent

Question Item	Category	Saga City		Fukuoka City	
		Frequency	%	Frequency	%
Sex	Man	13	6.6%	8	3.8%
	Woman	182	92.4%	201	96.2%
Age	20- 29	47	23.9%	19	9.0%
	30- 39	112	56.9%	156	73.6%
	40- 49	33	16.8%	37	17.5%
	50- 59	1	0.5%	0	0.0%
	60 – 69	3	1.5%	0	0.0%
Household constitution	Parent with child	136	69.0%	187	88.6%
	Extended family	38	19.3%	12	5.7%
	Onlyfather or mother with child	15	7.6%	12	5.7%
	Others	5	2.5%	0	0.0%

III. INDEX OF THE NURSERY SCHOOL SERVICE AND THE SATISFACTION IN BOTH CITIES

This chapter showed an evaluation index (in Table 3) about the satisfaction of the nursery school. There is evaluated the index by the five methods of each "satisfaction" and "dissatisfaction".

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Table 3

Index of nursery school evaluation services system

Evaluation Index	Abbreviated Designation
A. Distance from the home to a nursery school	A. Home distance
B. Distance from the workplace to a nursery school	B. Workplace distance
C. Nursery school of the commuting course position	C. Commuting-course position
D. Improvement of child-care facility (building and garden)	D. Child-care facility enhancement
E. Policy for the childcare	E. Childcare policy
F. Improvement of education service	F. Education service
G. Time flexibility including the extended childcare	G. Extended childcare
H. Special correspondence such as the lunch for allergy	H. Allergic correspondence
I. Correspondence of parent and childcare person	I. Correspondence
J. Interchange between parents	J. Parents interchange

The evaluation of the item which was functional value including (a) the special correspondence such as the lunch for allergy and (b) the time flexibility including the extended childcare was higher in Saga city. In contrast, it was the evaluation that the item, which should be added to the function of the original nursery school. For example "the interchange between parents "and" the education service was lower.
The ratio that an item such as (a) the enhancement of the education service and (b) special correspondence like as the allergy correspondence lunch was satisfied with was low, whereas the ratio that (c) the policy for the childcare and (d) the correspondence of the correspondence and childcare person to parents which are satisfied higher in the Fukuoka city

IV. THE EVALUATION AXIS OF THE NURSERY SCHOOL SERVICE IN SAGA CITY AND ITS STRUCTURE

We carried out the factor analysis based on the main factor method about nursery school service evaluation ten items. As a result of analysis, eigenvalue adopted 2 factors more than 1 by Kaiser Standard (Table 4).Because the nursery school person correspondence and the education service showed 0.8 high prices as for the factor first than Table 4, we can interpret it as a factor about the enhancement of the environment in the nursery school. Because the second factor showedthe value that 0.8 was high in workplace distance and the commuting middle, we named it "flexibility at time". Therefore we performed the cluster analysis by the K-means method based on a factor score provided for a factor analysis and made the childcare service evaluation type of the respondent to four.

Type 1: Environmental satisfactory model (this group satisfied with the environmental enhancement in the nursery school than flexibility of the time)

Type 2: Flexibility of the time Model (this group satisfied with flexibility of the time than the environmental enhancement in the nursery school)

Type 3: Time and environmental priority Model (this group which both satisfy)

Type 4: Priority to entrance Model (the group which nothing satisfies)

As the characteristic of the cluster analysis (in Fig. 1),the distance from the house in Saga city showed the time value, which is smaller than 0.4 among items. Moreover the "workplace distance" and the "commuting middle" showed 0.8 high values, we understand that priority to the workplace is over the location of the house.

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Table 4

Result of factor analysis of the nursery school service evaluation (Saga City)

Item	The First Factor	The Second Factor
A. Correspondence	*0.84*	-0.10
B. Education-service	*0.82*	-0.03
C. Childcare policy	*0.79*	0.01
D. Childcare-facility	*0.68*	-0.02
E. Parents-interchange	*0.67*	0.08
F. Allergic-correspondence	*0.54*	0.25
G. Workplace distance	-0.03	*0.89*
H. Commuting-course-position	-0.11	*0.87*
I. Extended childcare	0.23	*0.44*
J. Home distance	0.07	*0.34*
Accumulation contribution ratio	42.5%	60.6%

※The main factor method, promax rotation (SPSS)

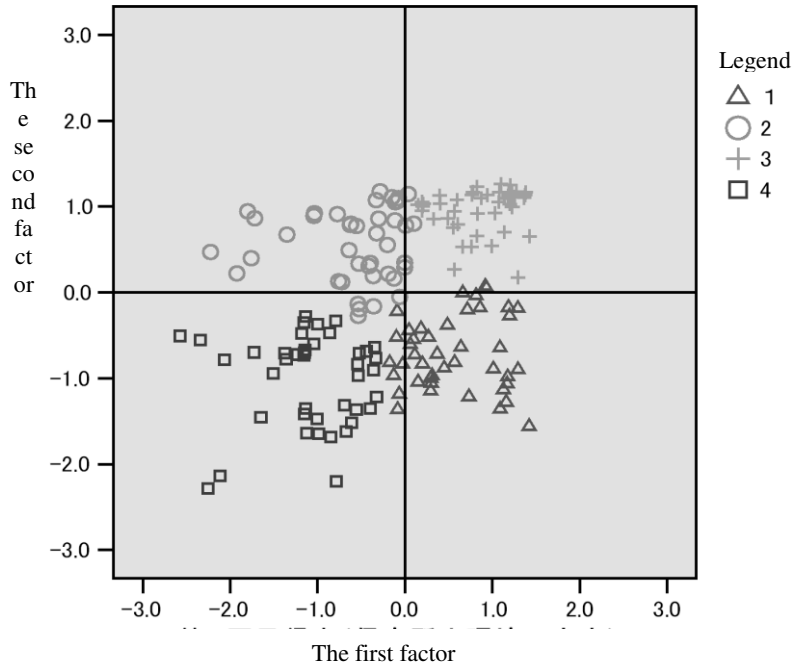

Fig. 1 The respondent type of the child-care evaluation service system using cluster analysis.

V. THE EVALUATION AXIS OF THE NURSERY SCHOOL SERVICE IN FUKUOKA URBAN AREA AND ITS STRUCTURE

Vibration The Fukuoka urban area carried out a factor analysis like as Saga city. Firstly we carried out a factor analysis in eight items again excluding the item when adopted the fourth factor because the factor loading of the item of "the allergic correspondence" was small.

As a result, we adopted 3 factors as we showed it in Table 5. An accumulation contribution ratio to the third factor is 56.6%.

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Table 5

Result of factor analysis of the nursery school service evaluation (Fukuoka city)

Item	First factor	Second factor	Third factor
A. Childcare-policy	*0.72*	0.02	-0.10
B. Parents-interchange	*0.48*	-0.15	0.07
C. Correspondence	*0.44*	0.39	0.05
D. Workplace distance	-0.15	*0.63*	0.02
E. Extended childcare	0.02	*0.41*	-0.11
F. Home distance	0.02	*0.34*	0.18
G. Childcare-facility	0.09	-0.10	*0.80*
H. Education-service	-0.25	0.17	*0.33*
Accumulation-contribution ratio	22.5%	41.3%	56.6%

※The main factor method, promax rotation (SPSS)

BecausefromTable 5 the factor first shows the value that an item about childcare contents and the communication, "a childcare person supports" "a childcare policy" and "protector interchange" is high, we can interpret it as a factor about "the childcare interchange environment of a child, the parents".

The second factor shows the value that "workplace distance" and "extended childcare" "home distance" is high in, we can interpret it as a factor about "the time flexibility from an institution location".

And the "child-care facility enhancement" and "education service" show a high price, the third factor can interpret it as a factor about "the education environment of the child".

We performed the cluster analysis by the K-means method based on a factor score provided for a factor analysis and then made the childcare service evaluation type of the respondent a type to four.

Type 1 there is higher in a value of "the childcare interchange environmental parameter of a child, the protector" from figure 2. In addition to a childcare policy, we judged that the weight of the mental-like part such as the parent interchange was high.

Type 2: there are showed a positive value in all, and the "education environment "childcare interchange environmental parameter of a child, the parent " of the child" shows a high value above all. Because a factor related to childcare policy and childcare person correspondence is high, it is thought with a type to give priority to the education of the child over, and, in addition to an institution and education service, this type can interpret a time element, a childcare policy, a basic element such as the childcare person correspondence as the type for the higher education service after having been satisfied.

Type 3: all factors show a negative value. Because there is not a specific priority, rather it is thought that we may give priority to entering a kindergarten itself of the nursery school.

"An institution location factor" shows a high value to type 4. Based on a result, we made the childcare service evaluation type of the respondent a type to four.

Type 1: Childcare interchange satisfaction model

Type 2: Education environment enhancement satisfaction model.

Type 3: Entering a kindergarten satisfaction

Type 4: Time flexibility satisfaction model

In addition, the ratio of the entering a kindergarten satisfaction model is high with 44%, and, as for the overall ratio, it is with 13% a flexibility satisfaction type next at childcare interchange sympathy satisfaction type 25%, education environment enhancement satisfaction type 18%.

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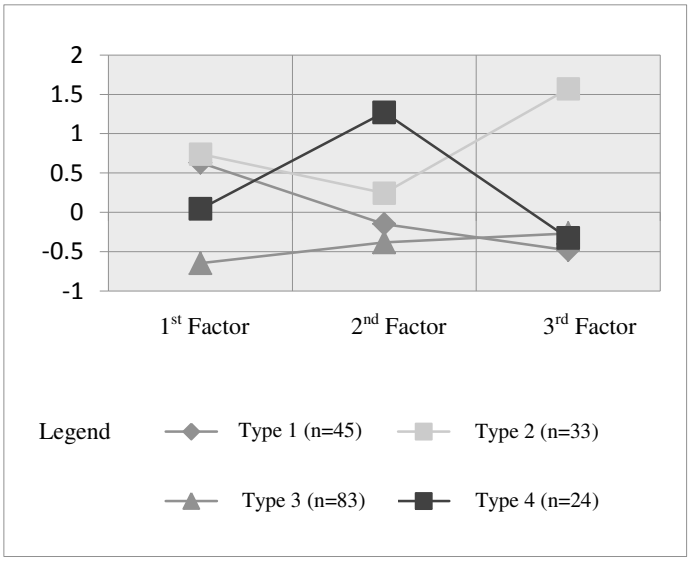

Fig. 2 The standardization mean of cluster analysis in Fukuoka city

VI. TYPE EVALUATION AND THE MOVING INTENTION OF NURSERY SCHOOL SERVICE, THE RELATIONSHIP OF THE RESIDENT ENVIRONMENT CHOICE ENTHUSIAST

Adams is the most widely used multimode dynamics and motion analysis software in the world. With the help of Adams, engineers can study the dynamics of moving parts, how loads and forces are distributed throughout mechanical systems, and to improve and optimize the performance of their products. We have seen how to prepare mathematical model and its representation in SIMULINK in the previous chapters. To create a SIMULINK model, we have to prepare the no. of equation of motion based on degree of freedom of the system. Then we use the blocks to represent those equations to find out result in simple manner. The most complicate part for simulation is to prepare the equation of motion for given model. In MSc-ADAMS, we can directly represent these models without preparing any equation of motions, which gives result in simpler This study performed some questions and cross tabulation to make clear that it is different in intentional lifestyle by the difference of each cluster and watches a relationship. Each cluster in Saga city and result that performed cross tabulation of a question whether "you want to move to in future". Some person said "I want to move in future" has high ratio of the satisfactory model at time, and the person whom "I have moved" to again is high in the satisfaction-shaped ratio at time. In each cluster in Saga city and cross tabulation of the question "what kind of place of residence want to live in when we choose a place of residence". As for the environmental satisfactory model, the ratio that wants to live near a central city area and the house of grandparents is high, and the ratio that wants to live in the suburbs with the satisfaction type at time is high.

As a result, it was revealed that the childcare service evaluation affected the moving intention and the place of residence to see more. Because the ratio that a satisfactory model wanted to move to at time and the ratio that wanted to live in the suburbs were high, we understood that the life in the suburbs and childcare service in environment rich naturally were expected.

The ratio of the suburban residential area tended to be high for the question that what kind of house environment it was desirable for to live for a child in Saga city.

The result is that cross tabulation made a question whether "you want to move to in future" for reasons of each cluster and child in the Fukuoka urban area. It becomes the childcare interchange sympathy satisfaction type of type 1 that the ratio that "has moved". Type 4 is high as for a person thinking to move. The education environment satisfaction model of type 2 is high ratio that "I have not moved, and there will not be in future either".

Moving intention is different by a childcare service evaluation type.

By the questionary survey of this Fukuoka urban area, we arranged the question about the lifestyle and grasped a lifestyle and association of the place of residence choice as following.

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Table 6

Important comparison between *convenience and neighbouring environment* (Fukuoka City)

Percentage	Convenience to Neighbouring Environment				
	Very Important (Convenience)	Important (Convenience)	Same	Important (Neighbouring Environment)	Very Important (Neighbouring Environment)
A. Childcare interchange 1	4.4%	11.1%	28.9%	46.7%	8.9%
B. Education environment 2	9.1%	18.2%	18.2%	39.4%	15.2%
C. Priority to entering a kindergarten 3	9.8%	29.3%	19.5%	32.9%	8.5%
D. Time flexibility 4	13.0%	34.8%	21.7%	26.1%	4.3%
Total	8.7%	23.5%	21.9%	36.6%	9.3%

Table 7

Important comparison between *town and nature* (Fukuoka City)

Percentage	Town to Nature				
	Very Important (Town)	Important (Town)	Same	Important (Nature)	Very Important (Nature)
A. Childcare interchange 1	0.0%	26.7%	13.3%	48.9%	11.1%
B. Education environment 2	6.1%	6.1%	15.2%	45.5%	27.3%
C. Priority to entering a kindergarten 3	3.7%	25.6%	29.3%	32.9%	8.5%
D. Time flexibility 4	13.0%	34.8%	13.0%	30.4%	8.7%
Total	4.4%	23.5%	20.8%	38.8%	12.6%

Table 8

Important comparison between *house and luxury goods* (Fukuoka City)

Percentage	House to Luxury Goods				
	Very Important (House)	Important (House)	Same	Important (Luxury Goods)	Very Important (Luxury Goods)
A. Childcare interchange 1	2.2%	15.6%	33.3%	40.0%	8.9%
B. Education environment 2	18.2%	9.1%	45.5%	18.2%	9.1%
C. Priority to entering a kindergarten 3	3.7%	25.9%	35.8%	32.1%	2.5%
D. Time flexibility 4	13.0%	34.8%	39.1%	8.7%	4.3%
Total	7.1%	21.4%	37.4%	28.6%	5.5%

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Table 9

Important comparison between *living environments and parent* (Fukuoka City)

Percentage	Parent to Child Important				
	Very Important (Child)	Important (Child)	Same	Important (Parent)	Very Important (Parent)
A. Childcare interchange 1	26.7%	40.0%	28.9%	4.4%	0.0%
B. Education environment 2	27.3%	45.5%	15.2%	12.1%	0.0%
C. Priority to entering a kindergarten 3	18.5%	44.4%	33.3%	3.7%	0.0%
D. Time flexibility 4	21.7%	30.4%	39.1%	8.7%	0.0%
Total	22.5%	41.8%	29.7%	6.0%	0.0%

This study performed each cluster and place of residence choice-oriented cross tabulation and analysed the connection with the nursery school service evaluation in the Fukuoka city.The education environment satisfaction type2 and childcare interchange sympathy satisfaction type1 tend to make much of outskirts environment than convenience. In addition, the flexibility satisfaction model tends to give priority to convenience at time (see in Table 6).

The education environment enhancement satisfaction type2 and childcare interchange sympathy priority type1 want to live in nature, and the flexibility satisfaction type4 want to live in town (see in Table 7).As for the childcare interchange sympathy satisfaction type1, luxury goods and the ratio to reply were high, and a house to reply were high with the flexibility satisfaction type 4 (see in Table 8). An answer to attach great importance to the living environment of the parent is 0%, and it is clear that the parent tends to make much of the living environment of the child (see in Table 9).As a result of investigation, it was revealed that the needs of the nursery school service were related to the place of residence choice by the residence lifestyle in the Fukuoka city.

VII. CONCLUSION

As a result of this study, a different thing became clear in the end-point, which parents pursued in the nursery school by cities. Both Fukuoka urban area and Saga city has a common factor of flexibility of the time.

In the environmental of nursery school, an institution-like part and a variety of sides including the childcare person correspondence were included. And the factor, which gave priority to interchange and the parents committee of the childcare person, and the factor, which gave priority to the sympathy to a childcare policy, and the education service of the child was extracted in the Fukuoka urban area. Moreover, factors increase in comparison with Saga city in the Fukuoka urban area.

A type was divided into "time" and "the environmental enhancement in the nursery school" in Saga city. As a tendency of Saga city, the association between choice and nursery school service of the place of residence is weak, and rather it may be said that the nursery school service evaluation axis is a work lifestyle type because the distance with the workplace and connection with the commuting course are high.

Moreover, the relation between the place intentional of residence choice and the evaluation to nursery school service became clear in the Fukuoka urban area. It may be said that the nursery school service evaluation spindle is a residence lifestyle type.

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