Quality Analysis of Child Care Services using SERVQUAL and Study on Factors Effecting Intent to Recommend to Others and to Re-use

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ing SERVQUAL and Study on Factors
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Chapter 1

Introduction

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Introduction «

The government's support for child care has been gradually expanded as the government promoted child care policy as part of its effort to promote women's participation in economic activities and to address low fertility by helping more women have more balanced work and family life and by providing financial support for child rearing. The government's budget for child care policy has increased exponentially since the implementation of a full-scale child care subsidy for preschool children in 2013. The number of private child care facilities has grown exponentially for the last decade and the number of children using such facilities has also been on an upward trend. The government's policy to support private facilities while helping improve their service quality by introducing, for example, a system that includes the governmental accreditation of child care facilities has led to an increased supply of private child care facilities. In short, the number of both child care providers and users. has increased dramatically.

Considering the sufficient number of child care facilities combined with the decreasing number of babies due to low fer-

tility, the provision of child care services seems to be sufficient. However, the quality of those services has not met the expectations. It is true that the availability of child care services has increased with the rising number of child care facilities. However, we are not convinced that all eligible children are receiving quality child care, although gratuitous child care has been implemented for all social strata. From the eligible service recipient's perspective, there is still lack of child care facilities while existing child care facilities are operating at less than full capacity. It indicates that though there are enough facilities, the existing facilities do not satisfy the users' expectations. A possibility is raised from the existing research studies that the growth of small-scale private child care facilities has been driven by quantitative expansion, while the quality of services has stayed low. If the goal of the government's policy is directed at universal child care support, it is imperative to review not only the quantitative sufficiency of child care facilities but also the quality of services provided by them.

According to the existing studies, the expansion of national and public child care facilities and that of workplace childcare facilities are desired by parents as part of service improvement requirements. Parents also strongly demand improvement in the quality of services such facilities provide through the means

such as, for example, the governmental accreditation of child care facilities(Lee Myoung Suk, 2009). A study by Park Sun Ae et al. (2009) analyzed the types of child care facilities, professionalism of child care facility owners/operators and service quality and facility environments with the child care facilities in *Guanak-gu* as a focus group. The research also developed the evaluation indexes of professionalism that include measures on kindness of teachers, their proactive efforts, professional knowledge and technology, excellency of programs, appropriateness of programs and education levels, and equipment usage. The study also investigated the evaluation indexes of service quality including responsiveness to complaints or suggestions, child care fees, the number of teachers and appropriateness of opening hours. The study examined cleanness, safety and comfort of the facility environment as well as the space per child, the number of children per teacher and the overall satisfaction level. The outcome of the study shows that professionalism is higher in private facilities than facilities run by district administrations(*gu-run facilities*) while both the space per child and overall satisfaction level are higher in *gu*-run facilities. Comparison of facilities by owner/operator indicates that private facilities show higher professionalism and greater overall satisfaction level than facilities run by religious organ-

izations or social welfare organizations. A study by Kim Ju Yeon (2010) surveyed parents using child care facilities with regard to childbirth characteristics, characteristics in their use of child care facilities and attitudes toward child care policies, and presented proposals for improvement of child care policies to promote childbirth. In particular, 400 residents of Kyeongsangnam-do as of May 2009 who use child care facilities were surveyed regarding their preferences for the type of child care facilities, service satisfaction, problems they recognize in the management of child care facilities and improvements they can suggest to promote childbirth. The results show that the survey respondents prefer national and public child care facilities and facilities run by legal entities, recognizing the need for further expansion of such facilities. The parents also display the need to expand and establish child care facilities that are tailored to vulnerable classes and affirm the high demand for the improvement in the child care environment, child care programs, safety and hygiene.

   Another study (Choi Young, 2010) analyzed accessibility to child care service and service needs under the condition of controlling all the other factors and found that users of private child care facilities are less satisfied with the accessibility of child care than that of national and public child care facilities.

In this study, the analysis was conducted by applying the concept of accessibility as incorporating geographical proximity, child care cost and usage time, and the result of the analysis shows that the satisfaction level of users of private facilities is lower in terms of cost than users of other types of facilities. In addition, according to the outcome of the existing study (Song Ji Yoon, 2011), the higher the mother's education level, the higher their satisfaction for child care teachers, and the higher the user's social status (based on job category), the higher their satisfaction for child care programs, while the lower the income level, the higher the satisfaction level for child care policy. The higher the satisfaction for child care teachers, the higher the satisfaction level for programs and the higher the satisfaction level for child care cost, the higher the satisfaction level for child care policy.

In the survey on the most critical factors regarding the head of the child care facility and teachers, it was found that theoretical and professional knowledge was regarded as the most essential requirement for the head while warm love and understanding were for teachers, indicating users have different expectations for the head and for teachers.

It is easy to find studies that conducted comparative analysis of the services of child care facilities by type, but it is hard to

find a study that has analyzed service quality by adopting a systematic service evaluation index.

This study adopted SERVQUAL instrument to analyze what areas fall under the level of user satisfaction through the analysis of expectation level and satisfaction level toward the service quality of child care facilities. In addition, this study is aimed at offering implications on service improvements in the future by analyzing under the condition of controlling demographic factors of users what effects the types of facilities have on the user's intent to recommend the facilities to others and their intent to re-use facilities and which areas of service evaluation have meaningful effects.

Chapter 2

Study Methods

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Study Methods 《

1. Analysis Material and Target

This study has focused on the reference data of 331 parents of children using day care centers as an analysis target out of 551 parents surveyed who are using child care and child education services (day care centers and kindergartens). Samples of the survey were allocated in demographic proportions to residents of Seoul and those of five other metropolitan cities. The survey was conducted through face to face interviews. The characteristics of the samples are described in the Table 1 below.

It was found in the survey that 156 out of 331 parents are residents of Seoul, the average age of mothers is 34.5 years, and monthly household income on average is 3.92 million won. Out of 331 children, children aged 0-2 years accounted for 46.2%; children aged 3-4 years 34.1%; and children aged 5-6 years 19.0%.

Looking at the types of child care facilities, 22.3% of them are national and public facilities and 77.7% private. Such proportions are attributable to the fact that most child care facilities in the country are private. Users of home-based child care centers accounted for about 8% of the entire users.

〈Table 1〉 Characteristics of samples

Variables	Frequency / Average	Rate / Standard Deviation
Sex	331	100.0
1) Males	89	26.9
2) Females	242	73.1
Region	331	100.0
1) Seoul	156	47.1
2) Busan	50	15.1
3) Deagu	37	11.2
4) Incheon	53	16.0
5) Gwangju	20	6.5
6) Daejeon	15	4.5
Employment status of mother	331	100.0
Full-time housewife	197	59.5
Full-time regular worker	112	33.8
Full-time irregular worker	10	3.0
Part-time irregular worker	4	1.2
Freelancer	8	2.4
Education level of mother	331	100.0
High school or lower	97	29.3
University or lower	227	68.6
Graduate school or above	7	2.1
Child age (year of birth)	331	100.0
6 years old (2007)	18	5.4
5 years old (2008)	45	13.6
4 years old (2009)	58	17.5
3 years old (2010)	55	16.6
2 years old (2011)	110	33.2
1 years old (2012)	43	13.0
0 years old (2013)	2	0.6
Type of child care service	331	100.0
National and public	74	22.3
Private	230	69.4
Home-based	27	8.1
Mother age	34.5	3.8
Father age	36.9	4.1
Monthly household income (unit: 10,000 won)	392	110

Table 2 describes the types of day care centers by the age groups of children. It was found that most age groups use private facilities rather than national and public facilities. As described earlier, the structure of facilities provided are mainly centered around private day care centers and as such, inevitably, the number of private facility users is greater than that of users using other types of facilities. Also, in the case of 6 year-old children, the rate of those using national and public facilities amounted to about 44.4%, which is relatively a high figure. But it should be noted that 6 year-old children generally tend to go to kindergarten rather than day care centers and that the number of surveyed children was only 18 while the survey was limited to those using day care centers. As such it is necessary to understand the characteristics of samples of the survey[1]. In addition, according to the studies conducted before the implementation of gratuitous child care service for all social strata in 2013, parents' preference for national and public facilities is conspicuous. For this reason, parents who once used for their children's care national or public facilities tend to stick to such child care facilities rather than moving their children on to kindergartens even though they become old enough to be eligible for applying for kindergartens. Therefore, it can be said that among 6 year-old children, the number of

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1) In the sample of original study against 510 persons, the number of 6 year old children was 76 and among them 58 went to kindergarten (76%) and only 18 (24%) used day care centers.

users using national or public facilities is greater than that of users of other types of facilities. Also, the studies show that among children aged between 2 and 5 years, about 20% of them went to national and public facilities while the rate of 1 year old children using national and public facilities was 11.6%.

〈Table 2〉 Day care center usages by ages of children

(unit: headcount, %)

Age of child (year of birth)	Total	Day care center		
		National and public	Private	Home-based
6 years old (2007)	18 (100.0)	8 (44.4)	9 (50.0)	1 (5.6)
5 years old (2008)	45 (100.0)	9 (20.0)	35 (77.8)	1 (2.2)
4 years old (2009)	58 (100.0)	17 (20.2)	40 (69.0)	1 (1.7)
3 years old (2010)	55 (100.0)	12 (21.8)	43 (78.2)	0 (0.0)
2 years old (2011)	110 (100.0)	23 (20.9)	74 (67.3)	13 (11.8)
1 years old (2012)	43 (100.0)	5 (11.6)	27 (62.8)	11 (25.6)
0 years old (2013)	2 (100.0)	0 (0.0)	2 (100.0)	0 (0.0)
Total	331	74	230	27

The following Table 3 shows the characteristics of mothers by type of facilities used by their children. There is little difference in the age of mother. As for the employment status of mother, in the case of households using national and public facilities, the rate of full-time housewives amounted to 75.7%, the highest figure, while in the case of households using

home-based day care centers, the rate was 40.7%, the lowest figure. As for the monthly household income on average, the income of households with children using home-based day care centers was 4.48 million won, the highest figure while that of households with children using national and public day care centers was 3.76 million won, the lowest. As the admission to the national and public facilities is made in the order of low income households such as the recipients of national basic livelihood guarantees and near poverty groups, the difference of household incomes may be occasioned by such admission standards. For the same reason, the survey found that the education levels of mothers using national and public facilities are relatively lower than those of users of other types of facilities. One of the reasons why the incomes of households using home-based day care centers are relatively high is that the rate of double income households is high. Generally, home-based day care centers are mainly used by infants and most of infants taken care at day care centers have working mothers. For this reason, the surveys showed that the average monthly incomes of households using home-based day care centers are relatively high.

〈Table 3〉 Social and demographic characteristics of mothers of surveyed households

Variables	Day care center		
	National and public (n=74)	Private (n=230)	Home-based (n=27)
	Frequency (%) Average (S.D.)	Frequency (%) Average (S.D.)	Frequency (%) Average (S.D.)
Mother age	35.3 (3.8)	35.3 (4.0)	34.7 (3.4)
Mother employment status			
Employed	56 (75.7)	130 (56.5)	11 (40.7)
Not employed	18 (24.3)	100 (43.5)	16(59.3)
Monthly household income (10,000 won)	376 (101)	390 (108)	448 (145)
Less than 2 million won	0 (0.0)	2 (0.9)	0 (0.0)
Between 2 million and 3 million won	43 (58.1)	112 (48.7)	8 (29.6)
Between 4 million and 5 million won	30 (40.5)	102(44.3)	16 (59.3)
6 million won or higher	1 (1.4)	14 (6.1)	3 (11.1)
Mother education level			
Higher school or lower	30 (40.5)	64(27.8)	3 (11.1)
University or lower	44 (59.5)	159 (69.1)	24 (88.9)
Graduate school or higher	0 (0.0)	7 (3.0)	0 (0.0)

2. Evaluation indexes of child care service by using SERVQUAL instrument

SERVQUAL, which is a method developed to evaluate the service quality in service industries, is based on the research by Parasuraman (1985) and Parasuraman (1988). Ten areas related to the service quality were defined in the earlier study and the ten areas were consolidated to the five areas in the 1988 study. Table 4 shows the comparison of areas of each study.

〈Table 4〉 Comparison by service evaluation area

Area	Study in 1985	Study in 1988	
1	Tangibles	Dimension 1	Dimension 1
2	Reliability	Dimension 2	Dimension 2
3	Responsiveness	Dimension 3	Dimension 3
4	Communication	Dimension 4	Dimension 4 (Assurance)
5	Credibility		
6	Security		
7	Competence		
8	Courtesy	Dimension 5	
9	Understanding	Dimension 6	Dimension 5 (Empathy)
10	Access	Dimension 7	

The following Table 5 provides the definition of 5 dimensions proposed in SERVQUAL and the definition adopted in this study.

〈Table 5〉 Definition of 5 dimensions

Dimension	Original author	This Study
Tangibles	Physical facilities, equipment, and appearance of personnel	Physical facilities and teaching aids
Reliability	Ability to perform the promised service dependably and accurately	Ability to perform service dependably and accurately
Responsiveness	Willingness to help users and provide prompt service	Willingness to accommodate demand from children and parents and proactive attitude to provide service
Assurance	Knowledge and courtesy of employees and their ability to inspire trust and confidence	Knowledge and courtesy of teachers and their ability to inspire trust and confidence
Empathy	Caring, individualized attention the firm provides its users	Caring and individualized attention of facility providers toward parents and children

SERVQUAL was initially developed to measure the service quality of for-profit organizations and subsequently the use of SERVQUAL has been widely expanded to evaluate the service quality of non-profit organizations. In Korea, the techniques of SERVQUAL have been adopted frequently to evaluate the quality of social welfare service. Considering the various characteristics of service, fundamentally, it is not easy to convert them to indexes for evaluation. It is also inevitable that there are limitations in applying the indexes in the public welfare service sector, considering that the indexes were initially developed for the service evaluation of private sector companies. Nonetheless, the techniques of SERVQUAL are universally and widely used to evaluate the quality of service and to come up with improvement measures. Certainly, it is a very useful measuring tool until now.

SERVQUAL proposes 22 indexes for the service evaluation with regard to the five areas. The phrases of each index can be changed depending on the targets of service evaluation in understanding and applying the 22 indexes.

In this study, 27 evaluation indexes have been developed with regard to the five areas that SERVQUAL proposed. Evaluation indexes have been adjusted based on the definition of each area and by taking into account the characteristics of service which is subject to evaluation. Evaluation indexes have been defined and segmented in the process and eventually, a

total of 27 evaluation indexes have been created. Factors considered critical by parents have been defined and segmented in the process of developing measurement indexes. Table 6 explains the evaluation indexes adopted in this study.

〈Table 6〉 Evaluation indexes of child care service

Tangibles	1	Facility is well equipped with day care room (classroom), restroom, washroom, kitchen, feeding room, auditorium, etc.
	2	Facility is well equipped with play equipments (facilities) and teaching aids within doors.
	3	Facility is well equipped with outdoor playground facilities.
	4	Restroom, washroom, kitchen and feeding room of this facility are hygienically maintained.
	5	Day care room (classroom), entrance, corridor, playroom and auditorium of this facility are hygienically maintained.
	6	Facility is properly equipped with safety equipment such as non-slip mats, etc. in restroom and washroom.
	7	Facility is properly equipped with safety equipment such as safety bar in indoor stairways and indoor and outdoor playground facilities.
Reliability	8	Facility provides services according to annual, monthly and weekly plans.
	9	Facility accurately creates daily records and keeps a record of notices.
	10	Snacks and meals provided by the facility are cooked with reliable food supplies.
	11	Facility is able to properly respond to emergency situations.
	12	Facility observes arrival and departure time of vehicle to transport children to facility and get them back home.
	13	Facility observes operation hours and services are smoothly offered within the prescribed operation hours.
	14	Facility observes rules, for example, checking the guardian of child at the time of delivering children to parents.

Responsiveness	15	Facility promptly responds to the needs of children and makes efforts to address them.
	16	Teachers of the facility take care of and educate children proactively and with responsibility.
	17	Teachers of the facility proactively respond to demands and questions from parents all the time.
	18	Facility regularly phones and interviews to identify parents' needs and to exchange information on children.
	19	Facility properly responds and promptly notifies the guardian of child if the child gets injured or sick.
Assurance	20	Teachers of the facility have sufficient professional knowledge about child care and education according to development stages of children.
	21	Teachers of the facility have character and refinement suitable and required for child care teachers and kindergarten teachers.
	22	Teachers of the facility have a proper attitude to deal with children with care and love all the time.
	23	Teachers of the facility are trustable and reliable in usage of the facility.
Empathy	24	Teachers of the facility pay sufficient attention on each and every child.
	25	Teachers of the facility genuinely consider growth and development of children.
	26	Teachers of the facility well identify individual disposition and characteristics of parents and children.
	27	Children using the facility sufficiently interact with teachers and children are satisfied therewith.

3. Analysis Methods

In this study, questions on criticality, expectation level and satisfaction level were asked with regard to the evaluation indexes earlier mentioned, and then, Gap analysis was conducted to analyze the differential between expectation level and satisfaction level of each index. Gap analysis compares the expectation level before the use of service and the satisfaction

level after the use of service with regard to the relevant index and examines whether there is any gap and if so, verifies whether the gap is statistically meaningful. Gap analysis enables us to identify the indexes the satisfaction level of which does not live up to the expectation level.

This study is aimed at analyzing the gap between expectation level and satisfaction level with regard to the indexes of each of the five areas and compare the two levels with the average expectation level and the average satisfaction level of the entire 27 evaluation indexes in order to identify indexes that have the low satisfaction level but the relatively high expectation level.

In addition, Ordinal Regression has been adopted to analyse the factors that have effects on a user: whether the user intends to re-use the current facility, and whether the user intends to recommend the facility to others in the future. The analysis was made to discern whether different factors have effects on each of the two intents. As for the intent of re-use, the five-point scale was applied to the question, 'If I have another child (younger son or younger daughter), I intend to have the child admitted to the current facility in the following year.' As for the intent to recommend, the three-step questionnaire, 'I intend to recommend the facility wherein my child is taken care of to others around me,' was created and the five-point scale was applied. In order to control demographic characteristics of parents, residential environments and the characteristics of chil-

dren using facilities, adopted as independent variables are the education level of wife, education level of husband, employment status of wife, type of house, type of house ownership, type of facility, the number of children using day care center or kindergarten, the program satisfaction level of the current facility, the satisfaction level about facility, overall service satisfaction level and the sum of satisfaction levels of indexes of each of the five areas.

Chapter 3
Analysis Result

1. Gap analysis of expectation level and satisfaction level
2. Analysis of and intent to re-use and an intent to recommend to others

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Analysis Result \ll

1. Gap analysis of expectation level and satisfaction level

In this study, questions on criticality, expectation level and satisfaction level were asked for each index. Looking into the differences, criticality has the highest score, followed by the expectation level and the satisfaction level. According to the analysis of the differential between expectation level and satisfaction level, the satisfaction levels for all indexes did not live up to the expectation levels and most of differences between the two levels were statistically meaningful. In the Gap analysis, if coordinates are drawn by using as axes the average scores of the expectation level and the satisfaction level of the entire 27 indexes, it is possible to create four planes (categories) by adopting as a starting point the average scores of the two levels. In this study, the average scores of the expectation level and the satisfaction level of the entire 27 indexes are 4.29 and 4.15, respectively. The four categories can be defined as follows: in the first category, both the expectation level and the satisfaction level are high; in the second one, the expectation level is high but the satisfaction level is low; in the third one, the expectation level is low but the satisfaction level is high;

and in the fourth one, both the expectation level and the satisfaction level are low. In sum, it is imperative to focus efforts for improvement in areas that have relatively high expectation level but low satisfaction level.

A. Tangibles

Table 7 shows that in the case of tangibles, the index having the biggest differential between the expectation level and the satisfaction level is that 'the child care room (classroom), entrance, corridor, playroom and auditorium of the facility are hygienically maintained'. Specifically, in the five-point scale, 4.34 points was received for the expectation level and 4.13 for the satisfaction level, showing a gap of 0.21. Following thereafter, the index that 'the facility is well equipped with play equipments (facilities) and teaching aids within doors' attained 4.31 points for the expectation level and 4.14 for the satisfaction level, showing a differential of 0.17. The result of analysis shows that these indexes have relatively high expectation and low satisfaction level, which means that further efforts for improvement are required.

〈Table 7〉 Service quality of day care center: tangibles of facility (n=336)

Measuring index	Average expectation level (SD)	Average Satisfaction level (SD)	Gap
Facility is well equipped with day care room (classroom), restroom, washroom, kitchen, feeding room, auditorium, etc.	4.34 (0.53)	4.18 (0.54)	0.15***
Facility is well equipped with play equipments (facilities) and teaching aids within doors.	**4.31 (0.56)**	**4.14 (0.58)**	**0.16*****
Facility is well equipped with outdoor playground facilities.	4.17 (0.56)	4.06 (0.64)	0.10*
Restroom, washroom, kitchen and feeding room of this facility are hygienically maintained.	4.34 (0.53)	4.25 (0.58)	0.08*
Day care room (classroom), entrance, corridor, playroom and auditorium of this facility are hygienically maintained.	**4.34 (0.62)**	**4.13 (0.67)**	**0.21*****
Facility is properly equipped with safety equipment such as non-slip mats, etc. in restroom and washroom.	4.26 (0.57)	4.12 (0.61)	0.14***
Facility is properly equipped with safety equipment such as safety bar in indoor stairways and indoor and outdoor playground facilities.	4.22 (0.47)	4.13 (0.54)	0.09**
27 indexes altogether	4.29	4.15	

Note: $+p < .1$, $*p < .05$, $**p < .01$, $***p < .001$

B. Reliability

Table 8 shows that with regard to reliability, the index having the biggest differential between the expectation level and the satisfaction level is that 'the facility is able to properly respond to emergency situations'. Specifically, in the five-point scale, 4.30 points was received for the expectation level and 4.12 for the satisfaction level, showing a differential of 0.18. Following thereafter, the index that 'snacks and meals provided by the fa-

cility were cooked with reliable food supplies' revealed a differential of 0.16 with 4.30 points for the expectation level and 4.14 for the satisfaction level. The result of analysis shows that these indexes have relatively high expectation but low satisfaction level, which menas that further efforts for improvement are required.

〈Table 8〉 Service quality of day care center: service reliability (n=336)

Measuring index	Average expectation level (SD)	Average satisfaction level (SD)	Gap
Facility provides services according to annual, monthly and weekly plans.	4.33 (0.53)	4.24 (0.55)	0.09*
Facility accurately creates daily records and keeps a record of notices.	4.40 (0.58)	4.27 (0.66)	0.13**
Snacks and meals provided by the facility are cooked with reliable food supplies.	**4.30 (0.59)**	**4.14 (0.63)**	**0.16***
Facility is able to properly respond to emergency situations.	**4.30 (0.59)**	**4.12 (0.57)**	**0.18***
Facility observes arrival and departure time of vehicle to transport children to facility and get them back home.	4.22 (0.49)	4.14 (0.59)	0.08*
Facility observes operation hours and services are smoothly offered within the prescribed operation hours.	4.19 (0.48)	4.10 (0.52)	0.09**
Facility observes rules, for example, checking the guardian of child at the time of delivering children to parents.	4.34 (0.52)	4.21 (0.59)	0.12**
27 indexes altogether	4.29	4.15	

Note : +p 〈 .1,　Note : *p 〈 .05, **p 〈 .01, ***p 〈 .001

C. Responsiveness

With regard to responsiveness, the index having the greatest differential between the expectation level and the satisfaction level was that 'the teachers of the facility take care of children proactively and with responsibility'. Specifically, in the five-point scale, 4.47 was received for the expectation level and 4.20 for the satisfaction level, showing a differential of 0.27. However, the satisfaction level of this index, compared with the indexes as a whole, is not that low. In this index, both the expectation level and the satisfaction level are high com-pared with the average values of the two levels. However, the efforts for improving service quality are still required precisely because the expectation level of this index is remarkably high. Following thereafter, the index that 'the facility phones and in-terviews to identify parents' needs and exchange information on children' showed a differential of 0.17. This index has rela-tively low expectation level and low satisfaction level compared with the average values of the two levels, implying that the ur-gency for improvement is low.

〈Table 9〉 Service quality of day care center: service responsiveness (n=336)

Measuring index	Average expectation level (SD)	Average satisfaction level (SD)	Gap
Facility promptly responds to the needs of children and make efforts to address them.	4.34 (0.52)	4.18 (0.58)	0.17***
Teachers of the facility take care of and educate children proactively and with responsibility.	**4.47 (0.56)**	**4.20 (0.63)**	**0.27***
Teachers of the facility proactively respond to demands and questions from parents all the time.	4.25 (0.61)	4.13 (0.71)	0.11*
Facility regularly phones and interviews to identify parents' needs and to exchange information on children.	4.20 (0.54)	4.03 (0.63)	0.17***
Facility properly responds and promptly notifies the guardian of child if the child gets injured or sick.	4.23 (0.50)	4.08 (0.57)	0.15***
27 indexes altogether	4.29	4.15	

Note : +*p* 〈 .1, *p 〈 .05, **p 〈 .01, ***p 〈 .001

D. Assurance

With regard to assurance, the index showing the greatest differential is that 'the teachers of the facility has character and refinement suitable and required for child care teachers and kindergarten teachers'. Specifically, in the five-point scale, 4.35 was received for the expectation level and 4.18 for the satisfaction level, showing a differential of 0.18. However, relatively speaking, the satisfaction level of this index exceeds the average value and so it is not that low. Following thereafter, the index that 'the teachers of the facility have a proper attitude to deal with children with care and love all the time' revealed a dif-

ferential of 0.15 with 4.28 points for the expectation level and 4.13 for the satisfaction level. In the case of this index, the expectation level is relatively high but the satisfaction level is a bit low, implying that the urgency for improvement is not that high.

〈Table 10〉 Service quality of day care center: service assurance (n=336)

Measuring index	Average expectation level (SD)	Average satisfaction level (SD)	Gap
Teachers of the facility have sufficient professional knowledge about child care and education according to development stages of children.	4.28 (0.52)	4.19 (0.55)	0.09**
Teachers of the facility have character and refinement suitable and required for child care teachers and kindergarten teachers.	4.35 (0.60)	4.18 (0.71)	0.18***
Teachers of the facility have a proper attitude to deal with children with care and love all the time.	4.28 (0.62)	4.13 (0.65)	0.15***
Teachers of the facility are trustable and reliable in usage of the facility.	4.22 (0.48)	4.10 (0.56)	0.12**
27 indexes altogether	4.29	4.15	

Note : $+p < .1$, $*p < .05$, $**p < .01$, $***p < .001$

E. Empathy

In the case of empathy, the index having the greatest differential between the expectation level and the satisfaction level was that 'children using the facility sufficiently interact with teachers and children are satisfied therewith'. Specifically, in the five-point scale, 4.21 was received for the expectation level and 4.02 for the satisfaction level, showing a differential of

0.19. Following thereafter, the index that 'the teachers of the facility well identify individual disposition and characteristics of parents and children' revealed a differential of 0.17 with 4.26 points for the expectation level and 4.08 for the satisfaction level. Both the expectation level and the satisfaction level of these indexes are low, indicating that the urgency for improvement is not high.

⟨Table 11⟩ Service quality of day care center: service empathy (n=336)

Measuring index	Average expectation level (SD)	Average Satisfaction level (SD)	Gap (t-test)
Teachers of the facility pay sufficient attention on each and every child.	4.31 (0.52)	4.20 (0.56)	0.11***
Teachers of the facility genuinely consider right growth and development of children.	4.36 (0.61)	4.20 (0.70)	0.15***
Teachers of the facility well identify individual disposition and characteristics of parents and children.	4.26 (0.62)	4.09 (0.72)	0.17***
Children using the facility sufficiently interact with teachers and children are satisfied therewith.	4.21 (0.50)	4.02 (0.58)	0.19***
27 indexes altogether	4.29	4.15	

Note : $+p < .1$, $*p < .05$, $**p < .01$, $***p < .001$

2. Analysis of an intent to re-use and an intent to recommend to others

Ordinal Regression model has been adopted to analyse the factors that have effects on a user's intent to re-use the current

facility and the user's intent to recommend it to others. With regard to the two dependent variables, adopted as independent variables are the education level of wife, education level of husband, employment status of wife, type of house, type of house ownership, type of facility, the number of children using day care center or kindergarten, the program satisfaction level of current facility, the satisfaction level about facility, overall service satisfaction level and the sum of satisfaction levels of indexes of each of the five areas. Table 12 below provides the result of analysis regarding a user's intent to re-use the current facility and the user's intent to recommend it to others.

〈Table 12〉 Factors having effects on a user's intent of re-use and the user's intent to recommend to others

Variables	Model to analyze an intent to recommend		Model to analyze an intent to re-use	
Independent variable (Reference category)	Estimate	Sig.	Estimate	Sig.
Program satisfaction level	.901**	.004	.944***	.000
Facility satisfaction level	1.466***	.000	.334†	.094
Overall service satisfaction level	.952***	.001	.342	.134
Tangibles satisfaction level	.201*	.038	.053	.500
Reliability satisfaction level	-.050	.644	-.016	.850
Responsiveness satisfaction level	.188	.100	-.040	.661
Assurance satisfaction level	-.114	.413	.065	.564
Empathy satisfaction level	.256*	.047	.237*	.020
Age of wife	-.024	.703	-.083	.111
Age of husband	-.004	.951	.016	.747
Age of child	.014	.898	-.058	.514
Number of children using facility	.042	.909	.583†	.054
Monthly household income	-.001	.510	-.003*	.041
Education level of mother (Graduate school or higher)				
High school graduation	.008	.995	.297	.779

Variables	Model to analyze an intent to recommend		Model to analyze an intent to re-use	
University graduation	-.505	.662	.482	.635
Employment status of mother				
Not employed	-.113	.761	-.401	.184
Education level of father (Graduate school or higher)				
High school graduation	-2.029*	.031	-.525	.517
University graduation	-.984	.222	-.206	.773
Type of house (detached house)				
Apartment	.114	.838	.258	.584
Multiplex house	.226	.709	1.055*	.039
Type of house ownership (Monthly rent)				
Owner-occupied house	1.195	.607	-.209	.889
Lease on a deposit basis	1.170	.614	-.580	.697
Type of day care center (Home-based day care center)				
National and public	.503	.425	.900†	.080
Private	.575	.311	.468	.309

†$P< 0.1$, * $P<0.05$, ** $P<0.01$, *** $P<0.001$

According to the analysis result, the meaningful variables having an effect on a user's intent to recommend the current facility to others are the satisfaction level about programs, the satisfaction level about facility, overall service satisfaction level, the satisfaction level about tangibles, the satisfaction level about empathy, and the education level of father. That is, a user is more likely to recommend current facility to others as the satisfaction level about programs rises, as the satisfaction level about facility rises, as the overall service satisfaction level moves upward, as the satisfaction level about tangibles moves upward, as the satisfaction level about empathy moves upward, and as the education level of father goes up. On the other

hand, the result of analysis showed that the meaningful variables having an effect on a user's intent to re-use the current facility are the satisfaction level about programs, the satisfaction level about facility, the satisfaction level about empathy, the number of children using facility, monthly household income, type of house, and type of day care center. That is, a user is more likely to re-use the current facility in the future as the satisfaction level about programs rises, as the satisfaction level about facility rises, as the satisfaction level about empathy moves upward, as the number of children using the facility increases, as the monthly household income declines, if the user resides in multiplex houses (compared with those residing in detached houses), and if the user goes to national and public day care centers (compared with home-based day care centers).

Table 13 provides the meaningful variables out of the variables subject to analysis in order to easily compare the factors having an effect on a user, whether the user has an intent to recommend the current facility to others and an intent to re-use it.

〈Table 13〉 Comparison of factors having effects on a user's intent to re-use and the user's intent to recommend to others

Variables	Model to analyze an intent to recommend		Model to analyze an intent to re-use	
Independent variable (Reference category)	Estimate	Sig.	Estimate	Sig.
Program satisfaction level	.901**	.004	.944***	.000
Facility satisfaction level	1.466***	.000	.334†	.094
Overall service satisfaction level	.952***	.001	.342	.134
Tangibles satisfaction level	.201*	.038	.053	.500
Empathy satisfaction level	.256*	.047	.237*	.020
Number of children using facility	.042	.909	.583†	.054
Monthly household income	-.001	.510	-.003*	.041
Education level of father (Graduate school or higher)				
High school graduation	-2.029*	.031	-.525	.517
University graduation	-.984	.222	-.206	.773
Type of house (detached house)				
Apartment	.114	.838	.258	.584
Multiplex house	.226	.709	1.055*	.039
Type of day care center (Home-based day care center)				
National and public	.503	.425	.900†	.080
Private	.575	.311	.468	.309

†P〈 0.1, * P〈0.05, ** P〈0.01, *** P〈0.001

Among the factors having an effect on a user's intent to recommend the current facility to others, factors such as the overall service satisfaction level, the satisfaction level about tangibles, and the education level of father have no statistically meaningful effect. By contrast, the number of children currently using facility, monthly household income, and the type of day care center have meaningful effects on a user's intent of re-use while these factors have no effects on the user's intent

to recommend the current facility to others.

Also, the satisfaction level about tangibles, along with the satisfaction level about facility, has greater effect as a critical factor on a user's intent to recommend to others than the user's intent of re-use. By contrast, a user is more likely to re-use the current facility as the number of children using facility rises, as the monthly household income level rises, if the user of facility resides in a multiplex house, and if the user goes to national and public facilities. A user's intent of re-use does not rise so high as in the above-noted factors, even if the satisfaction level about tangibles moves upward and the overall service satisfaction level moves upward. In short, not only the service satisfaction level but also other factors surrounding residential environments have meaningful effects on a user's intent to re-use the current facility.

Commonly in both cases, the satisfaction level about programs and the satisfaction level about empathy have meaningful effects. Accordingly, among the five service areas, the importance of empathy is greater than any other areas.

Chapter 4

Conclusion

4

Conclusion ≪

According to the result of Gap analysis with regard to the evaluation indexes altogether, there are the two indexes of tangibles and the two indexes of reliability that relatively have high expectations but low satisfaction levels, compared with other indexes. As for the indexes of tangibles, the improvement for service is required in the cleanness of indoor play equipment and the cleanness of teaching aids, entrance, corridor and playroom in order to raise the level of satisfaction. As for the indexes of reliability, the improvement for service is required for the services of feeding and snacks and for the ability to respond to emergency situations in order to raise the level of satisfaction.

Looking into the characteristics of users by facility, among the users of national and public facilities, the rate of full-time housewives is high. It is probably because the admission to national and public facilities is determined by requirements such as double income families, income brackets, multi-child families and so on. But, there is a possibility that the children of double income families are intentionally excluded from national and public facilities. It is difficult under the current systems to supervise and manage whether the order of priority in the admission is well respected by each facility.

According to the analysis of the factors having effects on a

user's intent to recommend to others and the user's intent to re-use, different factors have meaningful effects on each of the two intents. On one hand, among the factors having meaningful effects on a user's intent to recommend to others, the overall service satisfaction level, the satisfaction level about tangibles, and the education level of father have no statistically meaningful effect. On the other hand, the number of children currently using facilities, monthly household income on average, the type of house, and the type of day care center have meaningful effects on a user's intent to re-use but no effect at all on the user's intent to recommend to others.

It was found that the satisfaction level about tangibles, together with the satisfaction level about facility, serves as a more critical factor in the case of an intent to recommend to others than in the case of an intent to re-use. On the other hand, a user's intent of re-use is less affected by the satisfaction level about tangibles and the overall service satisfaction while the user's intent of reuse moves upward as the number of children using facility rises, as the monthly household income lowers, if the user resides in a multiplex house, and if the user goes to national and public facilities. In other words, in the case of an intent of re-use, the satisfaction level about programs and various other factors surrounding residential environments (the number of preschool children, household income and house type) have more meaningful ef-

fects than the factors such as the satisfaction level about the exterior of facility and the service satisfaction level. Commonly in both cases, the satisfaction levels about programs and empathy have meaningful effects. Accordingly, it seems that the area of empathy has more important effects on the user's intent to recommend to others and the user's intent to re-use than other any other among the five service areas

Conclusively, as for all facilities, efforts are required to maintain the service level in the empathy area while in the areas of tangibles and responsiveness, efforts should be made to strengthen indoor play equipment and teaching aids, reinforce the management of classroom cleanness, use quality food ingredients in the services of feeding and snacks and improve responsiveness to emergency situations.

For your information, according to the analysis result regarding the differential between the expectation level and the satisfaction level for each type of facility, the expectations for national and public facilities was shown higher for some factors, but have no statistical meaning and thus, the analysis result is not included in this document. This study deals with the statistical survey conducted after the implementation of gratuitous child care in 2013 and presumably, there is a possibility that the effects of gratuitous child care may have weakened the difference of preferences in times before and after the implementation.

References

A. Parasuraman & Valarie A. Zeithaml. (1988). A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality. *Journal of Retailing*, 64(1), pp.12-40.

A. Parasuraman., Valarie A. Zeithaml & Leonard L. Berry. (1985). A Conceptual Model of Service Quality and Its Implications for Future Research. *Journal of Marketing*, 49, pp.41-50.

Choi Young. (2010). Study on Comparing Child Care Accessibility Satisfaction Level of Parents Using Chid Care Service and Their Service Needs:with a focus on Seoul Metropolitan City. *The Journal of the Korea Association for Child Care and Education*, 64, pp.73~98.

Kim Ju Yeon. (2010). Direction of Child Care for Realization of Welfare Society. *The Journal of the Correction Welfare Society of Korea*, 19, pp.21~58.

Lee Myoung Suk. (2009). Perception Difference Among Child Care Providers: with a focus on Seoul Metropolitan City. *The Journal of Korean Open Association for Early Childhood Education*, 14(5), pp.153~174.

Park Sun Ae. & Tak Hyun Woo. (2009). Public Service Substantiation Analysis–with a focus on child care facilities in Guanak-gu. *The Korean Association for Policy Studies Spring Conference*. pp.539~555.

Song Ji Yoon. (2011). Study on Service Satisfaction Level of Parents Using Child Care Facilities (with a focus on Cheonan and Asan areas). *Policy Science Study*, 20(1), pp.113~137.