

**A Study of the Strategy for Increasing the Share of  
Public Childcare Facilities for Sustainable Urban Growth**

**- Focused on Seoul City, Low Fertility and Public Childcare Facility –**

**By**

**Chu-Hwan Chun**

**Submitted in partial fulfilment of the Degree of**

**MA Town and Regional Planning**

**The University of Sheffield**

**Department of Urban Studies and Planning**

**August 2017**

## **ABSTRACT**

Until now, population growth has brought human development. At the same time, it has been accompanied by a depletion of natural resources and the adverse effect of natural degradation. At present, the global trend is coming to a period of low fertility after the period of population growth, which is becoming the nucleus of urban problems that hinder sustainable urban growth.

The birth rate in Seoul, Korea is 1.001, which is the lowest in the world, leading a global trend. The biggest cause of this low birth rate is the burden of parenting. Compared with more than 60% of the public childcare share of most OECD countries, the share of public childcare in Seoul is at a very severe level of 13.9%.

The aim of this paper is to identify the expansion of public childcare facilities and to find strategies for achieving them, as an active solution to solve urban problems of low fertility that hinder sustainable urban development. In order to achieve the research objective, four research methodologies were conducted, namely a literature review, surveys, interviews, and a case study.

As a result of the study, the childcare policies of other countries which have been designed to solve the problem of low fertility, the necessity of public childcare facilities, the obstacles to establishing new public childcare and solutions to shortfalls in provision were derived. In particular, ways to increase the share of public childcare in addition to the construction of public childcare facilities were also studied. The consequences of a quantitative expansion of public childcare facilities as well as quality improvement measures were also studied.

Based on these results, in order to improve the rate of public childcare sharing, which is considerably lower than childcare-advanced countries, it is necessary to continuously expand public childcare facilities in order to improve the childcare environment and expand public childcare, and, in addition, it has come to the conclusion that besides quantitative improvement of childcare facilities, qualitative improvement should be made in parallel.

# TABLE OF CONTENTS

<b>LIST OF FIGURES</b>	<b>v</b>
<b>LIST OF TABLES</b>	<b>v</b>
<b>Chapter 1: Introduction</b>	<b>1</b>
<b>1.1 Background</b>	<b>1</b>
<b>1.2 Research Aims and Questions</b>	<b>5</b>
<b>1.3 Structure of Dissertation</b>	<b>7</b>
<b>Chapter 2: Literature Review</b>	<b>8</b>
<b>2.1 Low Fertility and Urban Growth</b>	<b>8</b>
<b>2.2 Countermeasure against Low Fertility</b>	<b>12</b>
<b>2.3 Public Childcare</b>	<b>15</b>
2.3.1 Childcare Facilities	16
2.3.2 Necessity for Public Childcare Facilities	17
<b>Chapter 3: Research Methodology</b>	<b>20</b>

<b>3.1 Scope of Study</b> .....	<b>20</b>
<b>3.2 Methodology</b> .....	<b>22</b>
3.2.1 Literature Review .....	22
3.2.2 Survey .....	23
3.2.3 Interviews .....	27
3.2.4 Case Study .....	28
<b>Chapter 4: Analysis of Research</b> .....	<b>29</b>
<b>4.1 Analysis of Overseas Cases for Solving the Low Fertility</b> .....	<b>29</b>
4.1.1 France .....	30
4.1.2 Sweden .....	32
4.1.3 The UK .....	34
4.1.4 Japan .....	35
4.1.5 Implications .....	37
<b>4.2 Advantages and Disadvantages of Public Childcare Facilities</b> .....	<b>38</b>
4.2.1 Satisfaction Analysis of Childcare Environment Field .....	38
4.2.2 Satisfaction Analysis of Childcare Program Field .....	39

4.2.3 Satisfaction Analysis of Childcare Teacher Field .....	40
4.2.4 Satisfaction Analysis of Childcare Facility Management Field .....	41
<b>4.3 Obstacles to building new childcare facilities and how to overcome them .....</b>	<b>42</b>
4.3.1 Converting private childcare facilities into public childcare facilities .....	43
4.3.2 Converting childcare facilities in apartment complexes into public childcare facilities ..	45
4.3.3 Establishment of Public Childcare Facilities inside Public Facilities .....	47
4.3.4 A Case Study: Seongdong district in Seoul .....	48
<b>4.4 Quality Improvement of Public Childcare .....</b>	<b>51</b>
4.4.1 Realization of facility standards of public childcare facilities .....	51
4.4.2 Improvement of Indoor Air Quality in public childcare facilities .....	52
<b>Chapter 5: Conclusion .....</b>	<b>53</b>
<b>5.1 Conclusion .....</b>	<b>53</b>
<b>5.2 Suggestion and Evaluation of Methodology .....</b>	<b>55</b>
<b>REFERENCE .....</b>	<b>56</b>

## LIST OF FIGURES

Figure 1.1: Total Fertility Rate in South Korea	3
Figure 1.2: Total Fertility Rate of the World	3
Figure 2.1: Population Projection by South Korea until 2100	8
Figure 2.2: Total Fertility Rate of South Korea by Year	9
Figure 2.3: The rate of increase of the social participation population of Women	9
Figure 2.4: Changing Member of Family of South Korea by Year	10
Figure 2.5: Total Fertility Rate of OECD main countries by Year	11
Figure 4.1: Population Projection by South Korea until 2100	30
Figure 4.2: Government Organization of Childcare in France	30
Figure 4.3: Family Benefits Public Spending	38
Figure 4.4: Regulations for new childcare facilities in apartment complexes (Sample)	46

## LIST OF TABLES

Table 1.1: Share of Childcare Facilities in Major OECD Countries	4
Table 2.1: Childcare Budget of Seoul by Year, Unit Billion Korea (billion won)	13
Table 2.2: Type of Childcare Facility of South Korea	16
Table 2.3: The number of Childcare Facility, Capacity and Infant, Seoul by 2016 (1)	17
Table 2.4: The number of Childcare Facility, Capacity and Infant, Seoul by 2016 (2)	19
Table 2.5: The Rate of Public Childcare Facility, the Major OECD	20
Table 3.1: Research Target Group	24
Table 3.2: Field of Measurement	26

Table 3.3: Details of Interviewees .....	27
Table 4.1: Total Fertility Rate of France by Year .....	32
Table 4.2: Total Fertility Rate of Sweden by Year .....	33
Table 4.3: Total Fertility Rate of England by Year .....	35
Table 4.4: Total Fertility Rate of Japan by Year .....	36
Table 4.5: Analysis Result of Childcare Environment Field .....	39
Table 4.6: Analysis Result of Childcare Program Field .....	39
Table 4.7: Analysis Result of Childcare Teacher Field .....	40
Table 4.8: Analysis Result of Childcare Facility Management .....	41
Table 4.9: Childcare Facilities in Apartment Complex in Seongdong district .....	49
Table 4.10: Childcare Facilities in Apartment Complex in Seongdong district by Year .....	49
Table 4.11: International Comparison of Childcare Facility Standards .....	52

## **Chapter 1: Introduction**

### **1.1 Background**

Up to today, the world population has been increasing for many centuries, and this has caused serious environmental destruction, resource depletion and polarization. Thus, in the past and present, many scholars had given serious warnings about population growth. According to a book by British demographer Thomas Malthus, the world population will grow exponentially, and he predicted that humankind will suffer from starvation and resource shortages (Malthus, 1798). Also, According to Paul and Anne's *The Population Bomb Revisited*, in relation to world population growth, science never produces certainty, and these projections have not been particularly accurate, so far. Nonetheless, it warns that population growth can pose serious risks in the future and that fundamental changes are urgent. In addition, Paul and Anne have even suggested ways to lower birth rates or increase mortality as a solution to population growth (Ehrlich 2009). From an environmental point of view, Damian Carrington, the Guardian's Environment editor, cited a study by Kimberly Nicholas of the Lund University in Sweden, which stated that the most effective way to cope with climate change, such as environmental degradation due to population growth, is to have fewer children. This is based on concerns about the very great amount of carbon emissions per capita (Guardian, 2017).

However, the world is changing rapidly and constantly. According to distinguished geographer Professor Danny Dorling, we should not worry so much, but dealt with when it comes (Dorling, 2013). He also predicted that population growth would fall from 9.1 billion people in 2100. Demographer Philip Hauser also expected that nearly half of the world's population lived in countries with fertility rates or alternative levels in 2000, and almost all countries will reach a low fertility rate for the next 20 years (Morgan, 2003). According to the German daily 'Die Zeit', "The world is now in a steamer called 'low fertility'. Although there is a difference in degree with developed countries, it is not an exception for poor countries or developing countries, which were analysed as a reaction to improvements in education and income levels (Die Zeit, 2014). Actually, according to the



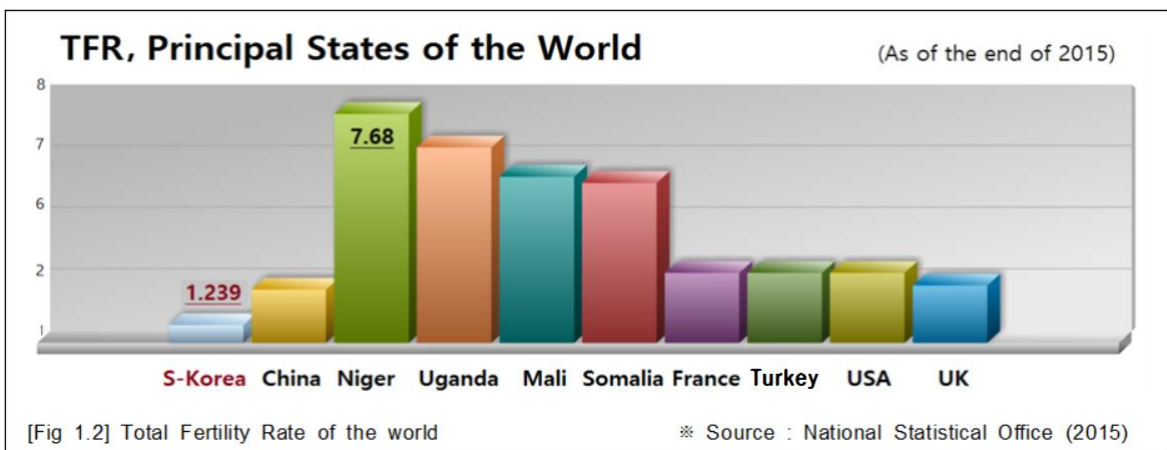
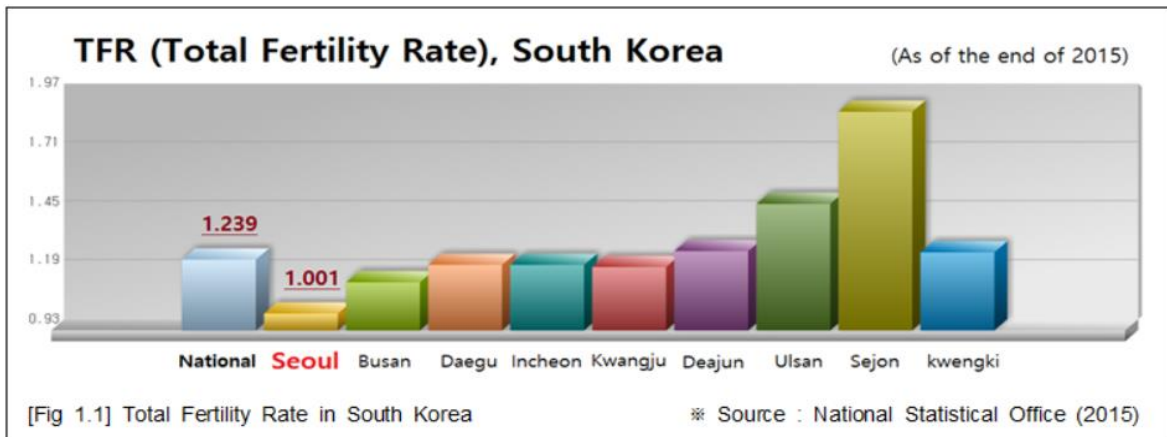
United Nations World Population Outlook report, the world population peaked in 2050 and will decline to 6 billion in 2100 and 3.6 billion in 2150, which is expected to shrink to half its current level (UN, 2009). As such, low fertility is becoming the nucleus of the urban problems, in a global trend.

Theoretically, if a community wants to maintain a population without immigrants, the couple must give birth to two children. However, more children should actually be born in order to maintain their current population because all children cannot survive until they become parents. According to Caixin journal in China, TFR (Total Fertility Rate) is the average number of children that a woman would expect to have during their lifetime. Internationally, if TER is lower than the population replacement level of 2.1, it is classified as a Low Fertility Rate and if it is lower than the population replacement level of 1.3, it is classified as an Ultra-Low Fertility Rate (Szlei, 2016). According to the policy report released by the research team of the Seoul Metropolitan Government Policy Development Institute, the change in population structure due to the long-term persistence of the Low Fertility Phenomenon, which is a global trend, can be a serious threat to the implementation of sustainable urban development because it leads to a decrease in labour productivity and an increase in social costs because of an increase in the elderly population (Kim, 2010).

In step with the global trend, the Seoul city of the Republic of Korea has also had a rapid decline in the fertility rate since the 1980s, and now, the phenomenon of an Ultra-Low Fertility Rate has been fixed. Kim's research team at the Seoul Metropolitan Government Policy Development Institute (SDI) pointed out that the main reasons for avoiding childbirth are economic instability and the burden of raising children, while another big barrier is that it is virtually impossible for women to balance work and family commitments (Kim, 2010). Demographer Philip Hauser also explained that the most important reason for low fertility is that it is difficult for women to harmonize work and family life (Morgan, 2003).

Currently, the economic activity rate among women in South Korea is steadily rising. However, the social support base for working women is insufficient, and the share of parental care in the home is weak. Working women are forced to choose between

"persistent employment" and "childbirth and childcare" due to the excessive double burden of work and family. According to NSO (National Statistical Office) in 2016, the TFR of Seoul city was 1.001, which was the lowest in the Republic of Korea, and the average TFR of the Republic of Korea was 1.239, which was the lowest in the world.



According to the 2014 Regional Employment Survey by the National Statistical Office (NSO), the reason for the drop in TFR is the economic burden such as housing and educational expenses, as well as the burden of career interruption due to childbirth and childcare (NSO, 2014). According to the Korean Government's Audit Policy Data, a family-friendly system for childcare support, such as parental leave, is being implemented as a solution to this problem, but the most fundamental solution is the need to expand public childcare facilities that can directly support childcare (Joo, 2010). According to the Infant Child Care Act, Public childcare facilities are childcare facilities operated by the government that care for infants between 0 and 6 years of age. The public childcare facility must be constantly expanded from infancy, but Government has failed to respond to this

demand due to the opposition from private childcare facilities and the government's budget shortage (Kwon, 2014). In particular, in the case of Seoul, the government is struggling to expand public childcare facilities because of the high cost of land purchase and construction.

As indicated in the Childcare Statistics of SMG (Seoul Metropolitan Government), there were 6,988 childcare facilities in Seoul, of which 922 facilities were public childcare facilities as of the end of 2015, which indicates that the share of public childcare facilities is only 13.9% of the total share of childcare facilities (SMG, 2016). On the other hand, the share of public childcare facilities in developed countries is 75% in Sweden, 67% in Denmark, 54% in Japan and 40% in Germany. This indicates that public childcare facilities have a high share ratio, which ensures the public funding of childcare.

	Share of Public Childcare Facilities (%)	Share of Private Childcare Facilities (%)
Australia	34 %	66 %
Japan	54 %	46 %
German	40 %	60 %
Sweden	75 %	25 %
Denmark	67 %	33 %
South Korea (Seoul)	14 %	86 %

[Table 1.1] Share of Childcare Facilities in Major OECD Countries ※ Source : Joo (2010)

As indicated in SMG's plan for expansion of public childcare facilities in 2016, SMG announced that 182,000 infants are waiting to enter public childcare facilities due to a lack of public childcare facilities, which means that an average one year waiting period is required (SMG, 2016). In order to solve these structural problems, it is necessary to expand public childcare facilities. However, expanding public childcare facilities requires both a large budget and much manpower. Moreover, various other obstacles have also occurred.

I have been working as a team leader at the Seoul Metropolitan Government for over 20 years. I also have been working as a planner and supervisor for childcare facilities over the same period. I wish to draw up a strategy to increase the share of public childcare facilities in Seoul using my long professional experience, as well as the research methods given above, such as a literature review, interviews, surveys and a case study.

## 1.2 Research Aims and Questions

The purpose of this study is to find strategies to achieve the expansion of public childcare facilities in Seoul, as an active solution to solving urban problems of low fertility that impede sustainable urban development.

The Republic of Korea is the world's lowest ultra-low fertility rate country. As one of the countermeasures, the government is strengthening its responsibility for childbirth and nurture. In particular, the role of the state is emphasized in reducing the burden of childcare and improving the quality of childcare services is vital. To this end, the central government and local governments have continued to expand childcare facilities. However, the demand for public childcare facilities is increasing explosively, due to the relatively low cost of childcare compared with private childcare facilities, an excellent childcare environment and good facilities. As evidence of this, according to the plan for the expansion of public childcare facilities in Seoul in 2016, 182,000 people are waiting to enter public childcare facilities. This means an average waiting period of two years (SMG, 2016). The reasons for preferring public childcare facilities are the lower costs of such provision and a desire for high quality childcare. Public childcare facilities cost about 20% less than private childcare facilities. The fact that public childcare facilities are Government-managed childcare facilities with high quality child care services, means that the fact that the quality of childcare teachers caring for infants is guaranteed is the reason why parents prefer public childcare facilities. Nevertheless, the current supply of public childcare facilities in Seoul is only 16.8% of the total childcare facilities, while 83.2% is dependent on the private sector.

The central and local governments are constructing public childcare facilities within their budgets, but the amount of new construction is not large enough to meet the needs of parents because of the enormous budget needed to build new facilities. Furthermore, the construction of public childcare facilities involves not only a very large budget but also a much time, so there is a limit to accommodating the rapidly changing needs of administrative demand. Thus, central governments and local governments are trying to find ways to meet and satisfy childcare demand in a short period in various ways.

The purpose of this paper is to present a solution or policy alternative to expand public childcare facilities through a literature review on the expansion of domestic and overseas childcare facilities, surveys of parents, interviews with specialist groups in each field, and case studies of promoted projects, which can be a cornerstone to the effort of government and local governments. In order to provide a structural framework for the aim of this dissertation, several research questions, which can be answered through several methodologies, have been devised.

The research objective is summarized as follows:

What are the strategies to increase the share of public childcare facilities for sustainable urban development?

From this objective, research questions can be specified as follows:

1. How have other countries changed their policies and childcare practices to address low fertility?
2. What are the relative strengths and weaknesses of public childcare facilities as opposed to private childcare facilities?
3. What is the evidence that Seoul needs more public childcare facilities?
4. What are the problems and obstacles that the Government faces in providing more public childcare facilities and how might these be overcome?
5. What methods can aid quality improvement, alongside the quantitative expansion of public childcare facilities to reinforce public childcare?

### **1.3 Structure of dissertation**

This paper consists of five chapters. Background, and Research Aims and Questions are outlined in Chapter 1.

Chapter 2 tries to answer the Research Questions through the literature review about the public childcare facilities. Above all, the correlation between Low Fertility and Urban Growth is reviewed, including the Countermeasure against Low Fertility. Moreover, the Concept of Public Childcare is studied, including Types of Childcare Facilities in detail. Then, the Necessity for Public Childcare Facility will be specifically focused on through various statistical data.

Chapter 3 provides the Scope of Study on the Strategy in order to increase the share of public childcare facilities for Sustainable Urban Growth. Furthermore, it describes a brief explanation of the research methods used in this study, which focus on a series of in-depth interviews with central and local government officials. In addition, other research methods, such as a survey and a case study, are also employed.

Chapter 4 seeks the answers to all four research questions. For this, firstly, the literature review is used to answer research Question 1, 3. A survey of research methods is used to answer research Question 2. Thereafter, in-depth interviews are analysed for answers research Question 4, 5. Lastly, a case study is used to attempt to answer research Question 4.

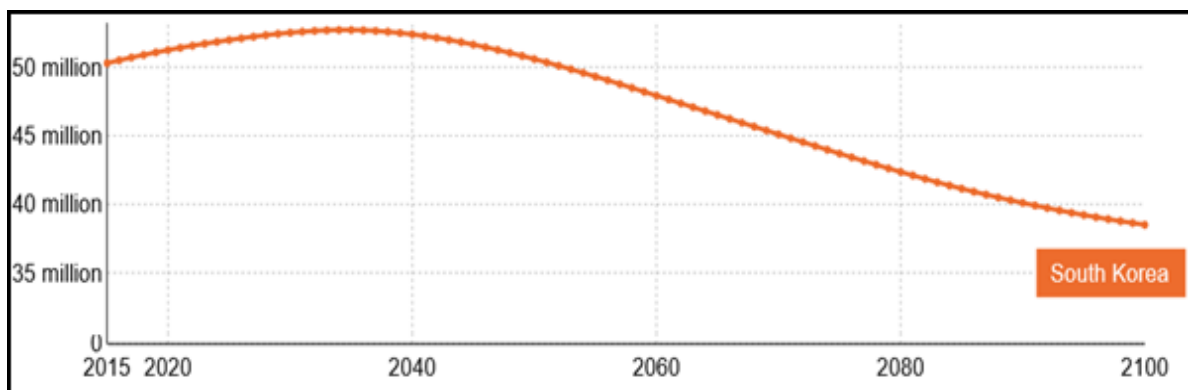
Finally, Chapter 5 summarizes the implications of the Strategy for Increasing the Share of Public Childcare Facilities for Sustainable Urban Growth.

## Chapter 2: Literature Review

### 2.1 Low Fertility and Urban Growth

According to the United Nations World Population Outlook report, the world population will increase from 6.5 billion in 2005 to 8.3 billion by 2030 and to 9.1 billion by 2050, as the populations of China and India grow. However, as the phenomenon of low fertility in developed countries has already spread around the world, world population is expected to decline from 2050 to 6 billion by 2100 and 3.6 billion by 2150, and which indicates a decrease by 50% from current levels (UN, 2009). Like this global trend, according to the Future Population Estimate of the Korea National Statistical Office, the Republic of Korea is predicted to peak at 49.34 million by 2018, and then decrease to 48.33 million by 2030 and to 42.34 million in 2050 (KNSO, 2017).

[Fig 2.1] Population Projection by South Korea until 2100



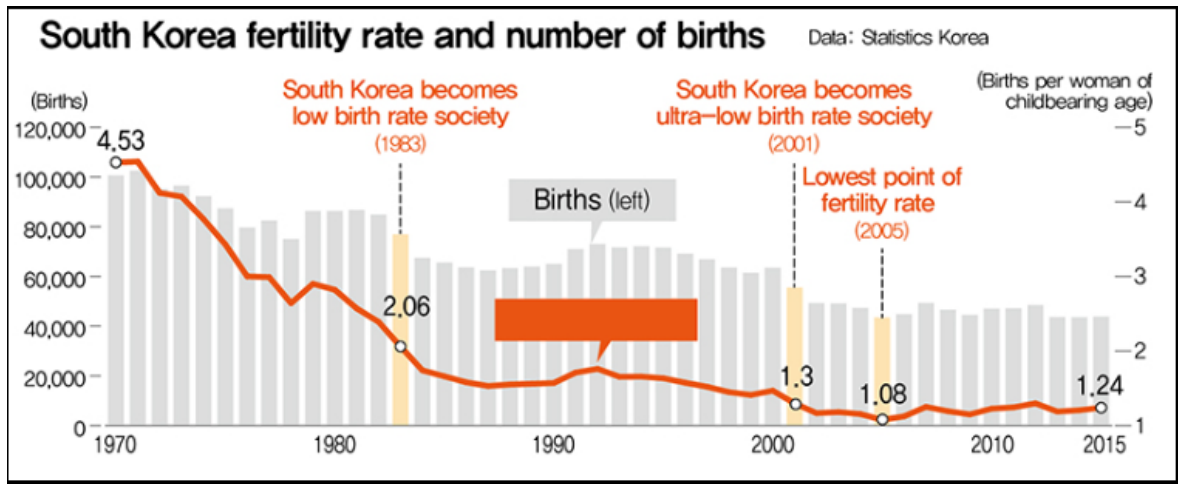
※ Source: KNSO (2010)

In academic terms, the total fertility rate is the average number of children a woman can have during her lifetime. Also, the population replacement level is the number of births needed to maintain the population. According to the United Nations Economic Commission for Europe (UNECE), it is necessary to have 2.1 children per woman in order to keep the population from increasing or decreasing. Based on this, most developed countries consider the population replacement level to be 2.1.

The fertility rate of the Republic of Korea has rapidly declined since the rapid industrialization and urbanization of the 1980s, and the world's lowest fertility rate has

recently been prolonged. The total fertility rate of the Republic of Korea, which was about 4.5 in 1970, has been steadily declining since reaching the population replacement level of 2.1 in 1983. The total fertility rate of the Republic of Korea in 2005 was 1.08, the lowest in the world, which is much lower than the OECD average fertility rate of 1.63.

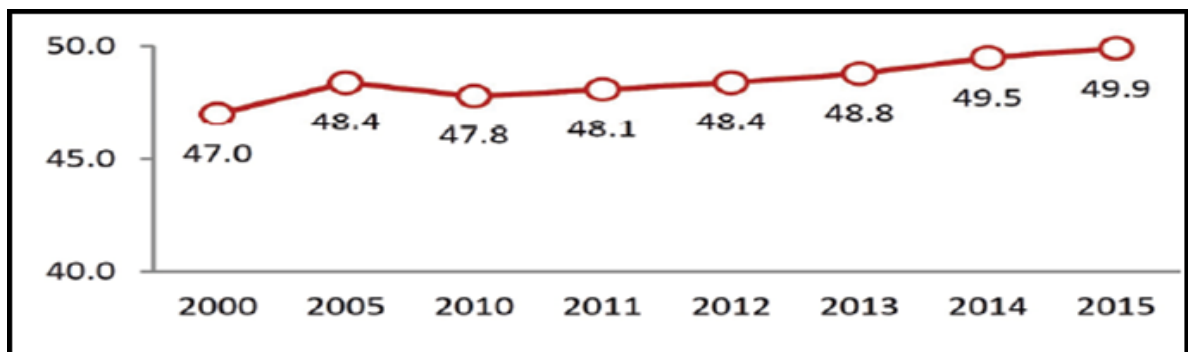
[Fig 2.2] Total Fertility Rate of South Korea by Year



※ Source: KNSO, (2017)

The low fertility phenomenon is a multidimensional social phenomenon resulting from the complex interaction of various social, cultural, and economic factors. The social factors of the declining fertility rate are due to obstacles to the balance of work and family caused by the increase in economic activity by women: in other words, the social activities of women are increasing. However, the main reason for the decline is the lack of social infrastructure to support both work and child rearing.

[Fig 2.3] Rate of increase of social participation population of women



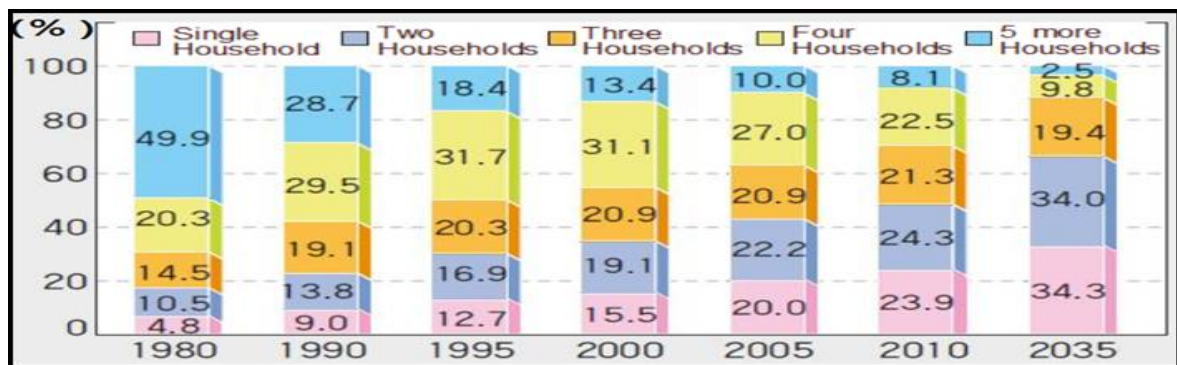
※ Source: KNSO, (2017)



Married working women are forced to choose between "continuing to work" and "childbirth" because of the excessive double burden of both work and family. According to a study by the Seoul Women and Family Foundation (SWFF) on the development of low fertility policies, for families without children, the proportion of a double-income family reached 61.4%, but if the number of children is one, it is seen that the rate drops sharply to 36% (SWFF, 2008). In addition, according to the regional employment survey by KNSO, 53.8% of women quit their jobs due to childbirth and childcare problems (KNSO, 2014). This shows that childbirth is causing career breaks, or breakdowns, for working women. In addition, gender equality in Korean society has also lowered the fertility rate of working women. In Sweden, an advanced country in family policy, both parents are equally responsible for childcare. Also, in Sweden, up to 16 months of maternity leave can be taken by either a mother or father, and for up to 13 months, 80% of income is guaranteed. In particular, two months have been recommended for parental leave for fathers, due to the social atmosphere of gender equality, where parents are equally responsible for childbirth and childcare. In Korea, the social atmosphere in which mothers are entirely responsible for childbirth and childcare causes low fertility.

In terms of cultural factors, changes in values, whereby it is increasingly considered that marriage and childbirth are not essential, and the weakening of the family support function due to the creation of the nuclear family are the main reasons for avoiding childbirth. In particular, the proportion of third generation families living with grandparents has declined dramatically. On the other hand, the social activities of women have increased. These imbalances are becoming a serious cause for giving up childbirth.

[Fig 2.4] Changing Members of Family of South Korea by Year



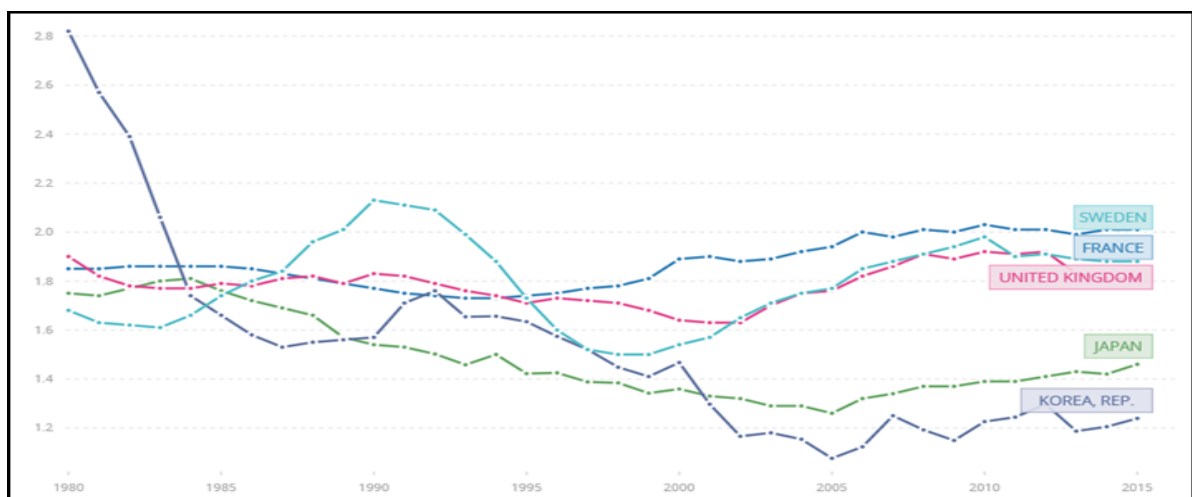
※ Source: KNSO, (2017)

Finally, the economic factors of the declining fertility rate result from economic instability and the childcare burden, which encourage people to avoid having children in modern society. In other words, the economic cost burden of childcare and education causes a fall in the birth rate.

It is known that, amongst all cultural, social and economic factors related to low fertility, the burden of childcare is a common denominator. Therefore, the policy that is needed most is one which solves the burden of childcare in order to solve the most significant causes of low fertility.

If the fertility rate is low, labour supply will be hindered, and there will be a lot of economic and social urban problems, including rapid population ageing. The decline in fertility rate is a common phenomenon in most countries in the world. However, in most European countries experiencing a low fertility rate similar to South Korea, the transition from high fertility to low fertility has taken place over a century, while in South Korea, the low fertility phenomenon has occurred so rapidly that it is difficult to identify the cause, which is clearly related to economics and its social side effects.

[Fig 2.5] Total Fertility Rate of OECD main countries by year



※ Source: Worldbank, (2017)

The adherence to the low fertility phenomenon poses a risk of destroying the foundation of future growth engines by causing a decrease in labour supply and labour

productivity. There is also a growing concern about the dangers of slowing economic growth such as falling productive investment due to population decline and insufficient capital formation. In addition, with the decline in the tax base due to the declining population, the decrease in the number of social insurance subscribers and the increase in the elderly population can lead to a significant increase in social security expenditure which can lead to considerable costs and risks to national finances. These changes are expanding the perception that low fertility is a threat to the sustainability of future society. According to the policy report released by the research team of the Seoul Metropolitan Government Policy Development Institute, the change in population structure due to the long-term persistence of low fertility, can be a serious threat to the implementation of sustainable urban development because it leads to a decrease in labour productivity and an increase in social costs (Kim, 2010). In addition, according to the joint announcement of the Korea Economic Research Institute and the Childcare Policy Institute, the social phenomenon, which is characterized by a decline in total fertility rates and difficulties in reconciling work with family, has an impact on human capital formation and women's participation in economic activities, and thus can hinder economic growth (Kwon, 2017). In fact, according to the OECD Economic Outlook Report, the potential growth rate of the Republic of Korea is maintained at 4% per annum on average annually, and the economic growth rate will decline to 1.9% or less from 2016, which is lower than the OECD average. According to the National Assembly Inspection of the National Assembly of the Republic of Korea, the sharp decline in the economic growth rate is due to the fact that the economically active population has been declining since 2017 as a result of Korea's severely low fertility (Joo, 2010). This demonstrates that low fertility has a direct impact on the sustainability of urban growth.

## **2.2 Countermeasure against Low Fertility**

In essence, it is reasonable that countermeasure against low fertility should be addressed in Korea because it is a population policy aimed at responding to the problem of structural population change. In addition, measures to cope with low fertility differ from general welfare. Low fertility is not a problem of low income people but a phenomenon

that the whole nation has in common. Therefore, it is necessary to extend the scope of the low fertility countermeasures to a universal concept.

Demographically, we can accept an open immigration policy as an immediate response to the low fertility. However, this may cause other social problems. It is not easy for foreigners with different languages, cultures and customs to settle in Korean society. In addition, there are many tasks to be solved such as social, cultural and educational conflicts. Therefore, efforts to raise fertility rate for indigenous people should be the top priority. Budgets are also needed to raise fertility rates, and patience is required for this policy to work. The problem of low fertility may well become an eternal challenge for the future if immigration policies are sought as a solution.

Therefore, In keeping with this trend, the budget for the government's measures to cope with the low fertility has been greatly expanded. In particular, according to the statistics released by the Korean National Statistical Office and the Ministry of Health and Welfare, the budget for low fertility in Seoul is estimated to have increased about 10 times from 106.8 billion in 2006 to 1065.6 billion in 2013 (KNSO, 2015).

[Table 2.1] Childcare Budget of Seoul by Year, Unit Billion Korea (billion won)

	2006	2009	2010	2011	2012	2013
Childcare Budget	1,083	3,198	4,194	5,458	7,934	<u>10,656</u>

※ Source: KNSO (2015)

The countermeasure against low fertility which should be pursued by the Korean government consists of five core areas: to reduce the economic and social burdens of childcare; to expand various and quality childcare support infrastructure; to expand support for pregnancy and childbirth; to create compatibility in the work-family; and to create a gender-equal family culture. Likewise, childcare is a commonly important element in all core areas. Since it was found that the main cause of low fertility is the burden of childcare, the countermeasures against this problem are also focused on this issue.

The Seoul Metropolitan Government of the Republic of Korea also focuses on a childcare support policy as a countermeasure against low fertility.

The policy of supporting the childcare of Seoul Metropolitan Government is to reduce the economic burden, to make family-friendly policy and to build a childcare infrastructure. Specifically, policies that reduce the economic burden include a project that supports childcare fees for children who use childcare facilities.

Currently, childcare support is provided to only the lower income bracket. Actually, it is necessary to expand the entire citizenry, but securing the budget is becoming a problem. In addition, family-friendly policies include maternity leave and childcare leave. According to the Labour Standards Act, maternity leave is a system in which working women can use 90 days of paid leave at the time of childbirth. In this case, the employer is responsible for the first 60 days and the remaining 30 days are covered by employment insurance. Childcare leave is a system that allows employees to leave work for up to one year if their child is under 6 years of age. At this time, the salary is 500,000 won monthly from employment insurance. However, the family-friendly policy has not yet been effective. Finally, the establishment of a representative childcare infrastructure includes the expansion of public childcare facilities, which is a fundamental way to reduce the burden of childcare, and at the same time maintain high parental satisfaction. However, this approach requires much budget and time, which is insufficient for the demand of citizens.

For these reasons, according to the results of a survey on the satisfaction rate of low fertility measures of the National Assembly of the Republic of Korea, 45.9% of people evaluated said that the government policies on low fertility were not successful (Joo, 2010).

Therefore, it is necessary to take more fundamental and effective measures to satisfy all citizens in order to cope with ultra-low fertility for the sustainable growth of Seoul.

## 2.3 Public Childcare

The low fertility phenomenon involves social, cultural and economic factors, and the childcare burden is a common denominator of all factors. Therefore, the most necessary policy is to solve the childcare burden in order to solve the causes of low fertility, which is why central and local governments are committed to publicising childcare as a fundamental solution to low fertility. The Master Plan for Low Fertility Measures announced by President Park Geun-hye in December 2015, recognized the importance of expanding public childcare as a solution to the problem of low fertility, and promised to expand public childcare facilities as a fundamental measure (Park, 2015). As society rapidly goes through the process of urbanization and industrialization, the social participation of women increases and the families become nuclear families, it is difficult to solve childcare problems in the home. In addition, due to the improvement of living standards by economic development, professional childcare was needed to meet the needs of the times. For this reason, childcare has become the role of the government.

The Republic of Korea's public childcare has been implemented since the Child Welfare Act of 1961 was enacted and promulgated. At that time, it began with the concept of protecting a child when the guardian is deemed not capable of doing this. Public childcare has been implemented in earnest since the Childcare Act of 1991 was enacted and promulgated. Since then, government organizations have been systematized, and the quality of childcare services has been improved, and the promotion of childcare has been strengthened.

According to the Korea Childcare Policy Institute, public childcare is very important for the nation in that it contributes to the healthy development of infants and to the participation of women in economic activities, thereby solving the problem of low fertility and at the same time being a source of sustained economic growth (KCPI, 2012).

### 2.3.1 Childcare Facilities

According to the Childcare Act of Korea, childcare facilities are classified into Public, Private, Corporate, Home, Workplace, and Parental Cooperative childcare facilities. The concept of public childcare facilities refers to childcare facilities established by the government or local governments for childcare, which look after 11 or more infants. This can be established directly by the heads of central and local governments without national approval procedures. The establishment standard should be arranged in a balanced manner in priority areas such as low-income areas, rural and vulnerable areas and areas lacking childcare facilities. Private childcare facilities are set up by individuals, and look after 21 or more infants, while facilities looking after less than 20 infants are classified into home childcare facilities. Corporate childcare facilities are established and operated by social welfare corporations. Workplace childcare facilities are established and operated by the employer for the workers in the workplace or near the workplace. Finally, the parental cooperative childcare facility is a facility where more than 15 parents form a union and operate it, looking after 11 or more infants (Childcare Act, 2016).

[Table 2.2] Type of Childcare Facilities in South Korea

	<b>Eestablishment Subject</b>	<b>Size</b>	<b>Eestablishment method</b>
<b>Public</b>	Central and Local Government	more than 11	Report
<b>Corporate</b>	Social Welfare Corporation	more than 5	Accreditation
<b>Private</b>	Individual	more than 21	Accreditation
<b>Workplace</b>	Employer	more than 5	Accreditation
<b>Home</b>	Individual	5 to 20	Accreditation
<b>Parent Cooperative</b>	Parents	more than 11	Accreditation

※ Source: The Childcare Act, (2016)

Typically, Private, Corporate, Home, Workplace, and Parent Cooperative except Public childcare facilities are collectively referred to as private childcare facilities.

### 2.3.2 Necessity for Public Childcare Facilities

Childcare facilities are public buildings where infants under the age of five are separated from their parents and meet for the first time. Also, these childcare facilities are very important, as they are the first educational institution to nurture democratic citizens who will be the protagonists of future generations, as well as having a great influence on the personality and social development of infants. Recently, the demand for childcare facilities has increased explosively due to the wide-scale free-of-charge childcare for children under 2 years old and childcare support fees for children under 3 years old to 5 years old since 2013 in the Republic of Korea. On the other hand, ironically, the number of infants is slowly declining because of the declining fertility rate, but the number of infants using childcare facilities is steadily increasing.

According to Seoul Metropolitan Government's 2016 childcare plan, the number of infants was 588,203 in 2010, which decreased by 57,719 to 530,484 in 2016, which means decrease of 9.0%. On the other hand, the number of childcare facilities increased by 9.2% from 5,870 in 2010 to 6,368 in 2016, an increase of 498. Meanwhile, the capacity of childcare facilities increased by 33,892 from 236,339 in 2010 to 270,231 in 2016 which means it increased by 9.8%. The number of infants using childcare facilities also increased by 29,969 from 206,581 in 2010 to 236,550 in 2016, which means an increase of 8.7% (SMG, 2016).

[Table 2.3] The number of Childcare Facility, Capacity and Infants, Seoul by 2016

The Number of	2010	2016	Increase Number	Rate of Increase	Mark
Total Infants	588,203	530,484	57,719	9.0 %	↓
Childcare Facility	5,870	6,368	498	9.2 %	↑
Capacity	236,339	270,231	33,892	8.8 %	↑
Infant using	206,581	236,550	29,969	8.7 %	↑

※ Source: SMG, (2016)



As mentioned above, the reason is because it is difficult to address childcare in the home due to an increase in women's social participation, the rise of nuclear families and citizens who demand specialised childcare due to the improvement of living standards by economic development. As a result, infants who are unable to enter childcare facilities because the supply of childcare facilities cannot keep up with demand are gradually increasing. In particular, the fact that people are waiting to enter the public childcare facility occur is becoming a social problem because public childcare facilities are relatively inexpensive and have an excellent childcare environment. In fact, according to the 2016 Childcare Master Plan by Seoul Metropolitan Government, 182,000 people were waiting to enrol in public childcare facilities, which is 43% of the total number of infants. This means that an average two year waiting period is required, due to a lack of public childcare facilities (SMG, 2016). Yonhap News, a Korean paper also reported that even if an infant is enrolled in a public childcare facility as soon as she is born, a waiting period of at least one to three years is required to enter public childcare facilities (Yonhap, 2012).

One of the reasons why infants prefer public childcare facilities is due to economic reasons. Parents prefer public childcare facilities because of the low cost of childcare that reduces the burden on parents compared to private childcare facilities. There is no parental burden for both public and private childcare facilities because the country has been paying all childcare costs for infants under two years old since 2013, when free childcare began. However, it can be seen that public childcare facilities are much cheaper than private childcare facilities for childcare fees from the age of 3 years or older when parents have to bear the expenses. In the case of 3-year-olds, the monthly childcare fee of the public childcare facility is 197,000 won, while private childcare facilities costs 251,000 won per month, which means that public childcare facilities are 20% cheaper.

In recent years, factors of preference for public childcare facilities have been shifting from economic reasons to high-quality childcare needs. Nowadays, in accordance with the increase of parents' economic power, the expansion of childcare fee support for infants over 3 years of age and free childcare for infants under two years old, factors of preference for public childcare facilities have been shifting from economic aspects to childcare

environmental aspects. In other words, the quality and service of public childcare facilities is high, and the quality of public childcare facility' teachers caring for infants is guaranteed, which is a major factor in choosing public childcare facilities. This trend was also shown in the Parental Needs Survey conducted by the Seoul Women Family Foundation in 2014. It was found that support preferences for childcare by working parents was 31% supporting childcare fees, and 69% in favour of expanding public childcare facilities to improve the childcare service, which was more than twice as high. In addition, the preference for childcare support services that working parents want is 70.3% in public childcare facilities, which is significantly higher than other services (SWFF, 2014).

Nonetheless, the current rate of public childcare facilities is only 16.8% of the total childcare facilities and 83.2% is dependent on the private sector. According to the Childcare Statistics by Seoul Metropolitan Government in 2016, there are 1,071 public childcare facilities among 6,368 childcare facilities in Seoul.

[Table 2.4] The number of Childcare Facility, Capacity and Infant, Seoul by 2016

The Number of	Total	Public	Corporate	Private	Home	Parent	Workplace
Childcare Facility	6,368	<u>1,071</u>	164	2,054	2,824	29	226
Capacity	270,231	74,851	9,362	117,842	51,025	903	16,248
Infant using	236,550	67,240	7,853	102,575	46,284	798	11,800

※ Source: SMG, (2016)

The rate of public childcare facility in Seoul is higher than the national average of 6.9% in Korea, but is significantly lower than the proportion of public childcare facilities compared to major OECD countries. In other words, the ratio of public childcare facilities in major OECD countries is more than 50%, with 83% in France, 81% in Sweden, 67% in Denmark and 54% in Japan, which means that the rate of public childcare facilities in Seoul is very low.

[Table 2.5] The Rate of Public Childcare Facility, the Major OECD

	Share of Public Childcare Facilities (%)	Share of Private Childcare Facilities (%)
France	83 %	17 %
Japan	54 %	46 %
Sweden	81 %	19 %
Denmark	67 %	33 %
South Korea (Seoul)	14 %	86 %

※ Source: SMG, (2016)

According to a study by the Seoul Women's Family Foundation, more than 30% of all childcare facilities are required to be secured as public childcare facilities in order to defend the market power of the private sector and to strengthen the promotion of childcare (SWFF, 2015). In addition, demand for public childcare facilities will continue with the full-scale provision of free childcare for children under 2 and the expansion of childcare fees for children aged 3 to 5 starting in 2013.

## Chapter 3: Research Methodology

### 3.1 Scope of Study

Public childcare facilities are being steadily expanded through the new construction method of central and local governments. However, the provision of public childcare facilities does not meet the needs of parents who want public childcare facilities due to the enormous budget and long period of time required to build public childcare facilities. In addition, considering a densely populated area like Seoul, it is very difficult to find sites for the construction of new public childcare facilities. Therefore, in this paper, I try to consider new construction methods as a way to expand public childcare facilities.

To this end, the scope of study in this paper is to build a multi-faceted strategy to increase the share of public services for sustainable urban development.

As the scope of the specific study states, “Research Question No 1, how have other countries changed their policies and childcare practices to address low fertility?” was studied through a literature review, including OECD reports and various papers.

The research methodology for “Research Question No 2, what are the relative strengths and weaknesses of public childcare facilities as opposed to private childcare facilities?” involved quantitative approach. Surveys were conducted on parents using public or private childcare facilities.

The research methodology of “Research Question No 3, what is the evidence for more public childcare facilities in Seoul?” was addressed through various reports, papers, and especially, various research reports of Seoul City.

“Research Question No 4, what are the problems and obstacles that the Government faces in providing more public childcare facilities and how might these be overcome?” was studied through semi-structured in-depth interviews and interviews. Interviews were conducted through the best expert groups in the field, with officials in charge and childcare facility directors. In particular, a case study was conducted to increase the share of public childcare facilities in Seoul.

Finally, “Research Question No. 5, what are the ways for quality improvement besides the quantitative expansion of public childcare facilities to reinforce the public childcare?” was conducted not only through a literature reviews, but also through semi-structured in-depth interviews and other interviews.

## **3.2 Methodology**

### **3.2.1 Literature Review**

In order to derive the results of “Research Question No 1, how have other countries changed their policies and childcare practices to address low fertility?” I focused on OECD reports and presentations. In addition, I actively used data from the government websites of each country and the data of the Korea National Statistical Office (KNSO). In order to investigate not only the OECD member countries but also the countries of the world, a multifaceted investigation was conducted through the related papers and the World Bank data. In addition, as a precedent study, literature reviews were conducted with reference to related laws, articles, research cases and documents of government related organizations. Through this, the relationship between sustainable urban development and low fertility has been identified, and the necessity of expanding public childcare facilities has been studied as one of the ways to solve this problem. Concepts and backgrounds of childcare facilities, types of childcare facilities, and related laws were also reviewed. In this process, “Research Question No 3, what is the evidence for more public childcare facilities in Seoul?” was also investigated. In particular, the statistical data that can be used as concrete evidence was available through various research materials and presentations of the Seoul Metropolitan Government. Research investigation in terms of “Research question No. 5, what are the ways for quality improvement besides the quantitative expansion of public childcare facilities to reinforce the public childcare?” was conducted through a literature review with semi-structured in-depth interviews.

Above all, in this process, I have worked in the relevant departments of the government for a long time, and the related research papers that have been carefully reviewed have made it possible to contribute this paper.

### **3.2.2 Survey**

In order to derive the results “Research Question No 2, what are the relative strengths and weaknesses of public childcare facilities as opposed to private childcare facilities?” surveys were conducted with parents using public or private childcare facilities. Through a survey methodology, the differences in parents' satisfaction with public childcare facilities and private childcare facilities were investigated. The reason for comparing the satisfaction levels of public childcare facilities and private childcare facilities is because I can pinpoint why parents prefer public childcare facilities. The reason for examining together the satisfaction of private childcare facilities is because it is possible to compare preferences by survey items, compared to public child care facilities. Through this, public childcare facilities can be found to be reinforced in comparison with private childcare facilities. As a result, the questionnaire was suitable for deriving the results of Research Question No 2, because it was possible to numerically compare the strengths and weaknesses of public childcare compared to private childcare through surveys.

This study was conducted on childcare facilities located in Seoul. The survey groups were selected as three public and three private childcare facilities, respectively. In order to reduce the deviation in the size of childcare facilities, the survey groups were selected for each of the small-sized facilities, with 19 or less; the medium-sized facilities, with 20 to 49; and the large-sized facilities, with 50 or more infants. A total of 30 parents were surveyed, including five parents who were using each childcare facility. Samples were selected among parents who have been using the childcare facility for at least two years were selected. In addition, a survey was conducted with parents who had used both public and private childcare facilities in order to ensure the representativeness of the sample.

From May 2017, the questionnaire was sent to directors of the childcare facilities through an email, and the directors distributed and collected the questionnaire to the parents who have used their childcare facilities.

[Table 3.1] Research Target Group

	<b>Classification by Size</b>	<b>Number of Samples</b>
<b>Public Childcare Facility</b>	Small-sized facility with 19 or fewer children	5 Parents
	Medium-sized facility with 20 to 49 children	5 Parents
	Large-sized facility with 50 or more children	5 Parents
<b>Private Childcare Facility</b>	Small-sized facility with 19 or fewer children	5 Parents
	Medium-sized facility with 20 to 49 children	5 Parents
	Large-sized facility with 50 or more children	5 Parents

The questionnaire surveyed only 6 out of 6,769 childcare facilities in Seoul. In addition, the research surveyed only 30 parents. For these reasons, there is a real limit to whether the results of the survey can be representative of the whole childcare facility. As all surveys are the same, there were limits to the time and space available to choose the maximum sample. Therefore, I made efforts to select the best samples possible. First, public and private childcare facilities were surveyed by 50%, respectively. Second, in order to reduce the variation in the size of childcare facilities, a sample was selected for each size. Third, parents who had used childcare facilities for at least two years were selected as the sample. Fourth, parents who had used both public and private childcare facilities were selected as the sample. Fifth, I distributed the questionnaires and secured enough time to complete the questionnaire. In this way, efforts were made to ensure the representativeness of the survey by selecting the best sample.

According to Professor Lee's published research paper on Korean Childcare policy at Daejeon University, four factors have a significant impact on the quality of childcare, which are the childcare environment, the childcare program, the childcare teacher and facilities management (Lee, 2000). Based on this, I conducted a questionnaire survey in the four areas in order to measure the satisfaction levels when using child-care facilities.

Firstly, it is a satisfaction survey on the environment of childcare facilities. According to Professor Park's paper at Yonsei University in Korea, the higher the childcare environment, the more positive effects were on the social, emotional, linguistic, cognitive, physical and motor development of infants. Also, the childcare environment has been found to have an influence on interaction with infants (Park, 2002). The field of childcare environment includes the indoor and outdoor area and size of childcare facilities, equipment such as lighting, heating and air conditioning and playing, and the space occupied by individuals.

Secondly, it is a satisfaction survey on programs delivering childcare facilities. The Ministry of Health and Welfare has instructed that childcare facilities regularly establish children's programs, have self-assessment and reflect the results in their operation. The childcare program area is expected to form a childcare activity plan. Childcare activity plans include childcare content, special activities, health check-ups, parental participation, parent counselling and field trips.

Thirdly, it is a satisfaction survey regarding the quality of childcare teachers in childcare facilities. The field of childcare teachers has an absolute influence on the overall atmosphere of educational institutions and is an important factor directly affecting the quality of education. According to Clarke-Stewart, Howes & Marx on quality improvement of childcare, the level of education and training of childcare teachers can be an important variable in improving the quality of childcare (Clarke-Stewart, 1992, Howes & Marx 1992). The area of childcare teachers includes kindness, expertise, courtesy and community with parents.

Fourthly, it is a satisfaction survey of management teachers of childcare facilities. In accordance with Article 24 of the Infant Care Act and Article 23 of the Enforcement Rule, the childcare facility director must establish and enforce regulations on the operation of facilities such as organization, personnel, salary, and goods. The field of childcare facilities includes financial transparency, appropriateness of childcare fees, treatment of suggestions, and transparency of facility operation.



[Table 3.2] Field of Measurement

	<b>Field of Satisfaction</b>	<b>Assessment Items</b>
<b>Satisfaction of Childcare Facility</b>	Childcare Environment	1. Lighting, Heating and Air Conditioning
		2. Bathroom, Sink
		3. Meal, Food, Snack
		4. Secure Facility
		5. Education Supplies
	Childcare Program	1. Adequacy of Childcare Programs.
		2. Parent Participation, Counselling
		3. Extracurricular Activities
		4. Field Trips
		5. Health Check-Ups
	Childcare Teacher	1. Kindness
		2. Expertise
		3. Community with Parents
		4. Childcare Plan Implementation
		5. Courtesy
	Facility Management	1. Financial Transparency
		2. Appropriateness of Childcare Fees
		3. Treatment of Suggestions
		4. Transparency of Facility Operation
		5. Expertise of Director

The data collected from the questionnaires were analysed using the SPSS (Statistical Package for the Social Science) program. A five-point scale was used for the numerical conversion and the statistical analysis of satisfaction survey. Very satisfied (important) was given as 5 points, and totally unsatisfactory (not important) as 1 point. The results were scored, and the mean and standard deviation were calculated and compared.

### 3.2.3 Interviews

As the research methodology on Research Question No 4, 5, semi-structured in-depth interviews and interviews were used. The qualitative approach helps to gather detailed comments from those directly responsible for the policy concerned. A series of interviews were conducted with four central government officials who planned and established childcare policies and four local government officials who implemented policies. In addition, interviews were held with four directors of childcare facilities who implemented policies in the actual field. As such, the interviewees consisted of eight public officials in charge of childcare policy and four chiefs who ran childcare facilities in the field, all of whom are the best experts in childcare policy. Interviews were conducted through face-to-face interviews and telephone interviews methods. Information on the interview, the consent form, and the interview schedule were communicated through an email.

The main contents of the interview consisted of three contents. First, what are the problems and obstacles to the expansion of childcare facilities? Second, what are the ways of increasing the share of public childcare facilities? Third, what qualitative measures, besides quantitative methods can be used to reinforce the public childcare?

The first and second questions were intensively asked of central and local officials, and the third question focused on the childcare facility director.

[Table 3.3] Details of Interviewees

Affiliation	Interviewee	Career field
<b>Total</b>	<b>12</b>	
Central Government (Ministry of Health and Welfare)	4	Team Leader
Local Government (Seoul Metropolitan Government)	4	Team Leader
Public Childcare Facility	4	Director of PCF

To be specific about the interviews, I briefly explained the contents of the interview to four central officials in advance by email, and then the interview time was coordinated and a video call was made. To do this, we used the Internet Web (KAKAO Talk video call). The contents of the conversation are automatically stored on the Web. After the interview, I converted the stored data into a document. Interviews were conducted once per person, within 10 minutes. The interviews were completed through several email replies because of lack of interview time.

To four local officials, I also briefly explained the contents of the interview in advance by email, and then the interview time was coordinated and a phone call was made. The contents of the conversation were recorded on the phone, after the interview, I converted the recorded data into a document. Interviews were conducted between at least 2 and at most 10 times per person, each of 10 minutes.

The interviews were completed through periodic phone calls. To the four directors of childcare facilities, I also briefly explained the contents of the interview in advance by email, and then the interview time was coordinated and a phone call was made. The contents of the conversation were recorded on the Phone. After the interview, I converted the recorded data into a document. Interviews were conducted about twice per person, within 10 minutes. The interviews were completed through several email replies.

### **3.2.4 Case Study**

Case studies are selected as the main method in many dissertations. As Stake's paper, shows, case studies are researches aimed at identifying the complication of the social phenomenon, and are used for understanding how cases are processed in the situational situation (Stake, 1995). Smith indicates that cases for undertaking a case study should be limited by a boundary (Smith, 1978), which means that an aim of the study should be different from similar other phenomena and involve specific operations within it. Moreover, Farquhar also explains that case studies should be suitable for answering the research questions (Farquhar, 2012).

“Research Question No 4, what are the problems and obstacles that the Government faces in providing more public childcare facilities and how to overcome them?” was addressed through a case study and semi-structured in-depth interviews and interviews. A case study was conducted to identify the factors involved in increasing the share of public childcare facilities in Seoul and Seongdong district, and the construction of new public childcare facilities. Due to the huge budget for constructing public childcare facilities, a long time span, and the difficulty of site selection, there is a limit to providing enough public childcare facilities. One way to solve these problems is to convert childcare facilities in apartment complexes into public childcare facilities.

As a case of this, I have studied the possibility of converting the private childcare facilities into public childcare facilities in the apartment complex in Seongdong district, which is located in the centre of Seoul city. This project, which has been promoted since 2015, was a project that I promoted as a project manager. It was a complicated project promoted through close cooperation with the Seoul Metropolitan Government and the Seongdong-district Office.

As a project manager, I studied the difficulties that I experienced during the project and the know-how that overcame them.

## **Chapter 4: Research Analysis**

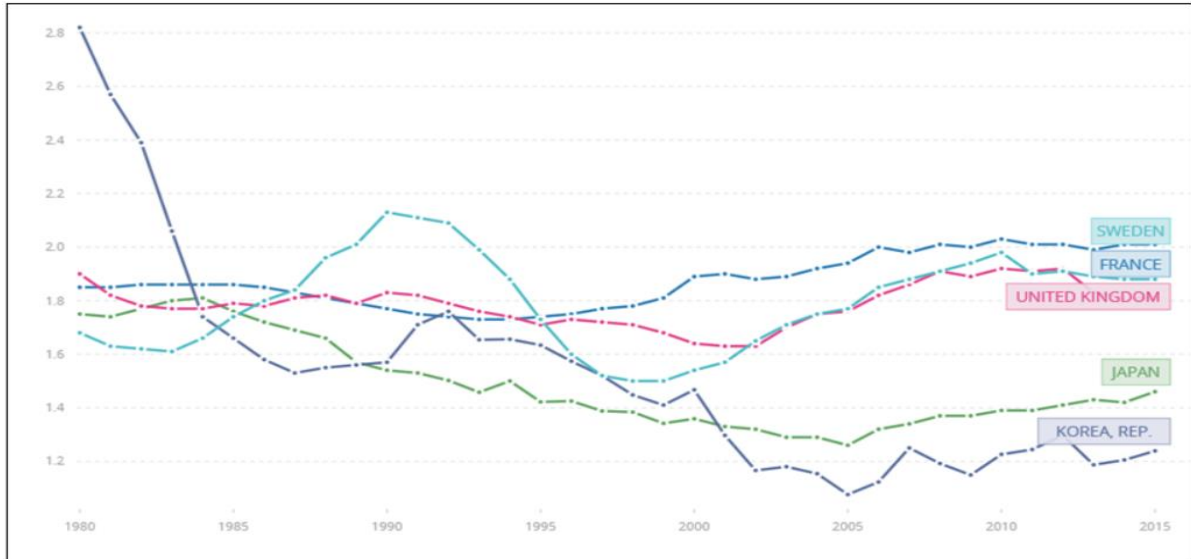
### **4.1 Analysis of Overseas Cases for Solving Low Fertility**

“Research Question No 1, how have other countries changed their policies and childcare practices to address low fertility?” was studied through literature review including OECD reports and various papers.

According to the Korea Institute for Health and Social Affairs, France, Sweden and the United Kingdom have succeeded in rebounding fertility rates, and Japan has announced that the fertility rate has started to rebound, but the Republic of Korea foresees

that its ultra-low fertility will continue (KIHSA, 2016). Therefore, I studied cases in France, Sweden, England and Japan.

[Fig 4.1] Population Projection by South Korea until 2100



※ Source: Worldbank (2017)

#### 4.1.1 France

France has recognized the population as an important resource of national competitiveness through two wars. In addition, France firstly experienced low fertility in Europe. For this reasons, French childcare policies have been implemented with the aim of overcoming low fertility by improving the support system since 1939. In addition, government organizations are differentiated from other countries in terms of childcare for infants and education for infants.

[Fig 4.2] Government Organization of Childcare in France



※ Source: Government Homepage in France (2017)

France is a representative country that maintains a high fertility rate through childcare support policies for families. In particular, the characteristic of the French family support policy is that it has an advantageous structure for the extended family, ranging from a family allowance, childcare leave and tax support, thus providing economic incentives for multi-child families. Specifically, family allowance is paid to all parents who have two or more children under 20 living in France, and the second child also receives a childbirth allowance and childcare allowance.

Apart from these, subsidies for people who provide childcare are also supported according to the number of children, which means that multi-child families are more advantageous. Childcare leave, which supports parents' direct childcare, is also implemented differently depending on the number of children. More specifically, the period of childcare leave is from 6 months to 1 year for the first child, but parents having the second child are guaranteed up to 3 years.

Meanwhile, according to the Family Benefits Report by the OECD, the budget for childcare support in France was 2.9% of the total budget at the end of 2013, which is considerably higher than the OECD average of 2.4% (OECD, 2016).

The childcare facilities in France are called 'Creches', which provide childcare for infants under the age of three, and more children can use 'Ecol Maternelle'. The types of 'Creches' can be divided into 'Collectives', 'Families', 'Parentsales', and 'Entrepreneurs'. According to the 2012 year's Study Result by Dress Journal in France, Creches in France have a total of 12,540 child care facilities. Of these, there are 10,406 public childcare facilities and 2,134 private childcare facilities, which means that the share of public childcare facilities is 83%. According to the survey of parents in 2016 by the 'Fédération Française des Ecoles de Cirque (FFEC)', the French Catholic federation, 98% of parents in France place their children in childcare facilities to improve their children's quality of life, and 96% of parents recommend that others leave their children in childcare facilities (FFEC, 2016). According to Lee's research team at the Korea Institute of Public Finance, France was selected as a country with a well-established public education system that

provides high-quality public education to infants and parental subsidies for childcare at home, and provides free education to infants through early childhood education institutions (Lee, 2013).

France had a total fertility rate of 2.85 in the early 1960s, but 20 years later in 1980, the total fertility rate fell to 1.85, making France an ultra-low fertility country.

[Table 4.1] Total Fertility Rate of France by Year

	1960	1970	1980	1990	2000	2014
TFR (per)	2.85	2.55	1.85	1.77	1.89	1.99

※ Source: Worldbank (2017)

However, by actively responding to low fertility, the total fertility rate started to rise in 1994, reaching 1.89 in 2000, which surpassed the 1980 total fertility rate. The total fertility rate rose to 1.99 in 2014, giving France the highest total fertility rate in Europe.

#### 4.1.2 Sweden

Sweden's childcare system for infants is said to have the most progressive system among OECD countries. Until the 1960s, childcare services were provided mainly for vulnerable women, such as those without spouses. Then, public childcare facilities were expanded, with various family policies being adopted since the 1970s. In 1998, a decentralized government organization was unified with the Ministry of Education and Research to integrate childcare and education. Sweden has fostered early public childcare systems with gender equality and women's participation in the labour market. Sweden has also provided childcare leave, childcare allowance, and education services for infants as well as providing additional support for multi-child families and vulnerable groups.

In particular, the characteristics of the Swedish childcare policy are that they are tailored to support parents. Specifically, childcare leave and childcare allowance are available for infants aged up to one year old who need for parental care. On the other hand, when the parents are reinstated in their post and need childcare, it has been strengthened in

public childcare provision and childcare fee support. Up to 16 months of maternity leave can be chosen by either the mother or father in Sweden, and 80% of income is guaranteed up to 13 months. In particular, it is recommended that fathers take two months paternity leave.

Meanwhile, according to the Family Benefits Report by the OECD, the budget for childcare support in Sweden was 3.6% of the total budget at the end of 2013, which was considerably higher than the OECD average of 2.1% (OECD, 2016).

The childcare facility in Sweden is called ‘Forshola’, which provides childcare for infants under the age six. A remarkable thing is that Forshola is mostly open throughout the year, taking into account the working hours of parents, and it has the principle of all-day education from 6:30 am to 6:30 pm because Sweden's childcare policy focuses on creating an environment where parents can achieve a work-family balance, and emphasizes the state’s responsibility for public education. With such a steady effort by the government, the share of public childcare in Sweden has increased to 80.6%.

[Table 4.2] Total Fertility Rate of Sweden by Year

	1960	1970	1980	2000	2014
<b>TFR (per)</b>	2.47	1.92	1.68	1.54	1.89

※ Source: Worldbank (2017)

In the early 1960s, Sweden had a total fertility rate of 2.47, but 20 years later, in 1980, the total fertility rate plunged to 1.68, and reached 1.54 in 2000, which means that Sweden became a low fertility country. However, because the government has actively responding to low fertility, the total fertility rate has started to rise since 2000, reaching 1.89 in 2014, making Sweden escape low fertility status.

Sweden's childcare policy focuses on creating an environment in which parents can work and maintain a family together and emphasizes the responsibility of the state for public childcare, thereby killing three birds with one stone: Increased participation of women in the labour market, Recovery of the fertility rate and Sustainable economic development.



### **4.1.3 The UK**

The UK's childcare policy is based on progressive universalism, in which the state supports all infants, but especially promotes more active support for vulnerable infants and families. This means more emphasis on disability, poverty and the vulnerable than on universal childcare support for all infants. For the sake of financial cuts, differential support has been provided for parents, whose annual income is less than 60,000 pounds, considering the number of infants from 2013. The UK has traditionally been a country with strong values of parental responsibility for childcare. However, when the Labour Party took power in 1997, it became a trend to regulate childcare as a national project and to expand and strengthen the roles of the government and the public sector. At this time, the ministries of the government, which had been divided into education and childcare, were also integrated as the Ministry for Children. One of the greatest features of UK childcare services is the recognition of informal childcare. Even if the grandparents and relatives care for their infants, they will be recognized and supported by the government.

Meanwhile, according to the Family Benefits Report by the OECD, the budget for childcare support in UK was 3.8% of the total budget at the end of 2013, which is considerably higher than the OECD average of 2.1%, and higher than all other OECD countries (OECD, 2016).

In the UK, compulsory education begins at age six. Childcare facilities for infants under 5 years of age are called the Family Daycare, where less than 5 infants are taken care of at home by childcare teachers, and Preschool, where are organized and operated by local authorities with parents, Nursery schools for 3 to 4 year olds, and Reception in elementary school. According to the UK government's Master Plan to expand free childcare support in July 2015 working families with infants between the ages of 3 and 4 can receive free childcare support up to 30 hours per week and 38 weeks per year after September 2017.

A working family means one whose working hours per week are more than 16 hours or whose annual income is less than 100,000 pounds. The UK government estimated that

this policy would benefit about 300,000 infants. Thus, by providing differential support for income as a non-universal childcare policy unlike other childcare-advanced nations, the UK is trying to strengthen support for low-income infants and to reduce inequality among income groups.

[Table 4.3] Total Fertility Rate of the UK by Year

	1960	1970	1980	1990	2000	2014
TFR (per)	2.93	2.44	1.90	1.83	1.64	1.83

※ Source: Worldbank (2017)

In the early 1960s, the UK had a total fertility rate of 2.93, but 20 years later, in 1980, the total fertility rate plunged to 1.90, and reached 1.64 in 2000, which means that the UK became a low fertility country. However, by actively responding to low fertility, the total fertility rate has started to rise since 2000, reaching 1.83 in 2014, meaning that the UK has ceased to be a low fertility country.

The UK's childcare policy is to provide support for low-income infants by providing income-based differential support, and efforts are being made to reduce inequality among the income brackets. In addition, by supporting parents who work in connection with their parents' employment status, they can also expect to increase the participation of women in economic activities.

#### 4.1.4 Japan

Japan has divided childcare and education for infants in two divisions: the Ministry of Health and Welfare (Ministry of Health of Korea) and the Ministry of Education (Ministry of Education in Korea). Japan has also increased the social responsibility for childcare since the 1960s. The demand for childcare has increased explosively since the 1990s, so they have made a lot of effort to lay the foundations for women's work and childcare together. Japan recognized childbirth rates and childcare as a social issue, and wished to ensure women would not avoid childbirth. The government announced and implemented a new Angel Plan to reduce the burden of childcare for working women in 2000. The main

policies of the Angel Plan were the expansion of childcare facilities for infants under 2 years of age is the first; and the promotion of childcare services in response to various demands. The third was the promotion of childcare support for infants at home, not in childcare facilities. Finally, they promoted after-school clubs.

Meanwhile, according to the Family Benefits Report by the OECD, the budget for childcare support in Japan was 1.3% of the total budget at the end of 2013, which is lower than the OECD average of 2.1% (OECD, 2016). However, despite the small budget allocation, Japan has overcome low fertility through the installation of various childcare services.

In the past, Japan has implemented a system which discharged infants from childcare if their parents took childcare leave due to having further children. In 2014, Japan abolished this system in order to relieve the burden on parents, and instead strove to establish public childcare facilities. With these efforts, Japan has reached 54% of the public childcare share. Childcare facilities in Japan are classified into accredited childcare facilities operated by the government, semi-accredited subsidized childcare facilities and non-accredited childcare facilities receiving no subsidies. Among these, accredited childcare facilities operated by the government provide childcare services only to infants who need childcare due to employment or other family circumstances.

[Table 4.4] Total Fertility Rate of Japan by Year

	1960	1970	1980	1990	2000	2010	2014
TFR (per)	2.00	2.13	1.75	1.54	1.36	1.39	1.42

※ Source: Worldbank (2017)

In the early 1960s, Japan had a total fertility rate of 2.00, but 20 years later, in 1980, the total fertility rate plunged to 1.75, and reached 1.36 in 2000, which means that Japan became a low fertility country. However, by actively responding to low fertility, the total fertility rate has started to rise since 2000, reaching 1.42 in 2014, meaning that Japan is no longer a low fertility country.

#### **4.1.5 Implications**

As mentioned above, I have studied the case of France, Sweden, England and Japan, which are OECD member countries which have escaped the danger of low fertility.

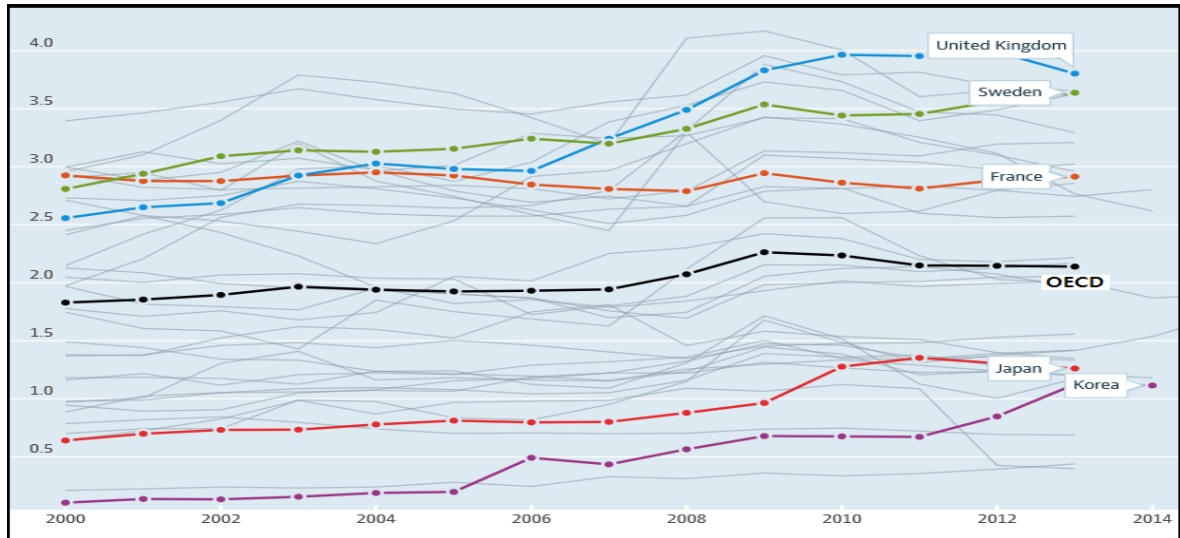
France is a representative country that maintains a high fertility rate through childcare support policies for families. Especially, the characteristic of the French family support policy is that it has an advantageous structure for the extended family. Sweden's childcare policy focuses on creating an environment in which parents can work and family together and emphasizes the responsibility of the state for public childcare. The UK's childcare policy is based on progressive universalism, in which the state supports all infants, but especially promotes more active support for vulnerable infants and families. Japan recognized childbirth and the childcare as a social issue, and designed policies which meant that women would not avoid childbirth.

Although these countries have different policy approaches, it is fundamental that they recognise that they have a responsibility for supporting infants by reducing the burden of childcare. In addition, most countries have much higher childcare budgets than the Republic of Korea. The most remarkable point is that the rate of public childcare facilities is much higher than that of Korea, which means that they can maintain a framework for public childcare.

For this reason, the low fertility trend is changing and the total fertility rate is increasing. In addition, the participation rate of women's economic and social activities has increased, and childcare has become recognized as a social and collective phenomenon.

In order for South Korea to overcome low fertility and to sustain urban growth, it is necessary to increase the share of public childcare through the expansion of public childcare facilities and various childcare services.

[Fig 4.3] Family Benefits Public Spending



※ Source : OECD (2017)

## 4.2 Advantages and Disadvantages of Public Childcare Facilities

The research methodology on “Research Question No 2, what are the relative strengths and weaknesses of public childcare facilities as opposed to private childcare facilities?” was studied through a quantitative approach. The content of the questionnaire is shown in the appendix at the end of the paper. The results are as follows.

### 4.2.1 Satisfaction Analysis of Childcare Environment Field

[Table 4.5] Analysis Result of Childcare Environment Field

Childcare Environment Field	Public	Private	Deviation
<b>The Whole Average</b>	<b>4.44</b>	<b>4.01</b>	<b>0.42</b>
1. Lighting, Heating and Air Conditioning	4.39	4.05	0.34
2. Bathroom, Sink	4.65	4.16	0.49
3. Meal, Food, Snack	4.54	4.09	0.45
4. Secure Facility	4.27	3.81	0.46
5. Education Supplies	4.33	3.96	0.37

According to the survey results, respondents perceived that public childcare facilities are more satisfied than private childcare facilities in all five childcare environment fields. Overall, these results can show that satisfaction of parents using public childcare facilities is higher than that of parents using private childcare facilities in the childcare environment field. In particular, satisfaction with bathrooms and wash basins was higher in public childcare facilities than in private childcare facilities.

#### 4.2.2 Satisfaction Analysis of Childcare Program Field

[Table 4.6] Analysis Result of Program Field

Childcare Program Field	Public	Private	Deviation
<b>The Whole Average</b>	<b>4.44</b>	<b>3.82</b>	<b>0.61</b>
1. Adequacy of Childcare Programs.	4.40	3.87	0.53
2. Parent Participation, Counselling	4.47	3.75	0.72
3. Extracurricular Activities	4.46	3.92	0.54
4. Field Trips	4.55	3.76	0.79
5. Health Check-Ups	4.30	3.81	0.49

According to the survey results, respondents perceived that public childcare facilities were perceived to be more satisfactory than private childcare facilities in all five childcare program fields. Overall, these results show that parental satisfaction with public childcare facilities is higher than for those parents using private childcare facilities in the childcare program field. In particular, the item ‘parental participation and counselling’ varied considerably compared to other items. This indicates that parental participation activities, counselling and observation classes performed well in terms of users’ perceptions of public childcare facilities.

### 4.2.3 Satisfaction Analysis of Childcare Teacher Field

[Table 4.7] Analysis Result of Childcare Teacher Field

Childcare Teacher Field	Public	Private	Deviation
<b>The Whole Average</b>	<b>4.61</b>	<b>3.99</b>	<b>0.63</b>
1. Kindness	4.61	4.06	0.55
2. Expertise	4.64	4.05	0.59
3. Community with Parents	4.52	3.92	0.60
4. Childcare Plan Implementation	4.59	3.93	0.66
5. Courtesy	4.70	3.97	0.73

According to the survey results, respondents perceived that public childcare facilities are more satisfactory than private childcare facilities in all five childcare program fields. Overall, these results show that parental satisfaction using public childcare facilities is higher than that for parents using private childcare facilities in the childcare teacher field. In particular, the courtesy item of childcare teacher varies considerably compared with other items. This indicates that better quality teachers are found in public childcare facilities because the teachers of public childcare facilities have higher salaries and better working conditions than those in private childcare facilities.

Indeed, according to the National Childcare Survey conducted by the Ministry of Health and Welfare in 2015, it was found that childcare teachers in the public childcare facilities receive 1.88 million won per monthly in salary, while childcare teachers in private childcare facilities receive 1.45 million won per monthly in salary, which means that childcare teachers in public childcare facilities earn approximately 30% higher than those in private childcare facilities.

#### 4.2.4 Satisfaction Analysis of Childcare Facility Management

[Table 4.8] Analysis Result of Childcare Facility Management Field

Childcare Facility Management Field	Public	Private	Deviation
<b>The Whole Average</b>	<b>4.39</b>	<b>3.55</b>	<b>0.84</b>
1. Financial Transparency	4.40	3.61	0.79
2. Appropriateness of Childcare Fees	4.13	3.46	0.67
3. Treatment of Suggestions	4.36	3.55	0.81
4. Transparency of Facility Operation	4.44	3.30	1.14
5. Expertise of Director	4.60	3.83	0.77

According to the survey results, respondents perceived that public childcare facilities are more satisfactory than private childcare facilities in all five childcare facility management fields. Overall, these results show that parental satisfaction with public childcare facilities is higher than that of parents using private childcare facilities. The remarkable thing was that the deviation in satisfaction between public childcare facilities and private childcare facilities in the management field of childcare facilities was the largest, compared to other fields. In particular, the deviation between public childcare facilities and private childcare facilities in transparency of facility operation is 1.14, which shows a considerable difference compared to other items. This indicates that public childcare facilities are regularly audited on condition that they are supported by the government, but private childcare facilities are not audited. In other words, private childcare facilities indicate that they are reluctant to disclose facility operations to parents.

As a result of analysing the differences in satisfaction levels between parents sending their infants to public childcare facilities and parents sending their infants to private childcare facilities, it is shown that the satisfaction levels of parents who sent their children to public childcare facilities was significantly higher than that of parents who sent their children to private childcare facilities, in all fields of the childcare environment, childcare programs, childcare teachers and childcare facilities management. The high level of parental satisfaction is also a result of the fact that public childcare facilities are superior to private childcare facilities in quality.



### **4.3 Obstacles to building new childcare facilities and how to overcome them**

“Research Question No 4, what are the problems and obstacles that the Government faces in providing more public childcare facilities and how to overcome them?” was studied through semi-structured in-depth interviews and interviews.

Four central government officials and four local government officials who were interviewed all agreed that the biggest problem of the construction of new public childcare facilities would be the massive government budget required, not only in terms of land acquisition and construction costs but also the purchase of equipment necessary for operation, requires a huge budget. According to the plans for expansion of public childcare facilities announced by the Seoul Metropolitan Government in 2016, the budget for the new construction of one public childcare facility was estimated to be approximately 1.7-million (Seoul City, 2016). On average, 10 public childcare facilities are being built in Seoul each year, meaning that a 17-million huge budget is being spent every year. Apart from a budget, finding sites for building public childcare facilities in a densely populated area like Seoul has also reached its limits. In particular, the three local officials interviewed said frankly that, in the case of local governments with low local financial capacity, there is a trend towards planned promotion due to the burden of the cost of constructing public childcare facilities.

According to the Seoul Metropolitan Government Officials, one of the four local officials interviewed, another obstacle was explained.

*Apart from enormous budgets, opposition from private childcare facilities is also a major obstacle to the construction of new public childcare facilities. Private childcare facilities have resisted the quantitative expansion of public childcare facilities due to their claim that childcare facilities are oversupplied and then management has deteriorated.*

*Indeed, due to parents' preference for public childcare facilities, Quota Capacity of public childcare facilities are close to 100% full, and waiting lists reached 124,000 at the end of 2016. On the other hand, in the case of small-scale facilities among private childcare facilities, the management is getting worse due to the fact that it cannot fill the*

*capacity. As a result of this, private childcare organizations are opposing the new construction of public child care facilities.*

To address these problems and obstacles, central and local governments are seeking ways to expand the proportion of public childcare in cooperation with private childcare facilities. It is urgent to expand public childcare facilities as a way to increase the share of public childcare facilities. However, there are difficulties, as shown above, such as budget, time, and securing the site in order to build new public childcare facilities.

I sought to solve these problems through in-depth interviews with central government officials who plan and establish childcare policy, local government officials who put policies into practice, and the director of childcare facilities that implemented policies in the actual field.

#### **4.3.1 Converting private childcare facilities into public childcare facilities**

Currently, private childcare facilities account for 83.2% of all childcare facilities. As can be seen from the interviews with experts, as a method to increase the share of public childcare, it is limited only by the construction of new public childcare facilities, and it can cause a backlash in private childcare facilities due to the deterioration in management. Therefore, measures should be taken to coexist with private childcare facilities.

One of the four local government official interviewees, a Seoul government official, explained how to convert private childcare facilities into public childcare facilities, as a solution.

*It is possible to solve problems required for the construction of new public childcare facilities such as the huge budget, time and site securing, and at the same time, to increase the share of public childcare facilities without the opposition of private childcare facilities. In particular, in order to prevent women from cutting off their careers, it is urgent to convert home childcare facilities in private childcare facilities into public childcare facilities. Actually, most of the public childcare facility waiting lists are 0 to 2 year old infants because it is difficult to find a place for a worker to leave a child.*

According to the 2016 Seoul Childcare Policy, the directors of private childcare facilities, childcare teachers, and parents all want to convert private childcare facilities into public childcare facilities. According to a survey of 8,232 directors, teachers and parents of private childcare facilities, 73% wanted to switch to public childcare facilities (SMG, 2016). This is because the director of childcare facilities wants to improve the environment of childcare facilities through government support, and the teachers in childcare facilities want better treatment by the government, and the parents also want the government to improve the quality of childcare services.

As a result of the interviews, two ways to turn private childcare facilities into public childcare facilities were put forward.

Firstly, private childcare facility operators lease childcare facilities to the government free of charge, and the government provides a way to turn private childcare facilities into public childcare facilities. In this case, private childcare facilities are rented to the government free of charge for 10 years, and the government converts the private childcare facilities into public childcare facilities and provides government support. At this time, the existing private childcare facility operators will be guaranteed 5 years of operation, and the government will entrust the operation rights through open bidding for the remaining five years. Government support for public childcare facilities includes budgetary support and the manpower support. Typical budget support includes remodelling childcare facilities and supporting equipment costs. Depending on the size of the facility, differential support of between £ 34,000 and £ 100,000 are needed. In this case, the remodelling is applied based on the guidelines for childcare facilities in Seoul. In the case of manpower support, one assistant teacher and a childcare assistant are provided per public facility. Once private childcare facilities are converted into public childcare facilities, they must be operated in accordance with government standards, and systematic field inspections are carried out. As a result, the quality of childcare services can be enhanced. In the end, it is possible to increase the share of public childcare facilities with a small budget.

Secondly, the government can purchase private childcare facilities directly and then switch to public childcare facilities. In this case, since there is no need for additional construction costs and equipment, the burden on the budget side is less than with a new construction, and the time required for new construction is also saved. In particular, there is an advantage in solving the difficulty of securing a suitable site.

### **4.3.2 Converting childcare facilities in apartment complexes into public childcare facilities**

Another interviewee explained how to convert childcare facilities in public apartment complexes into public childcare facilities.

Due to the urban structure as a densely populated area, most of the housing types in Seoul are apartment complexes. Generally, the demand for childcare in apartment complexes is considerably high because of the dense population of apartment complexes. Currently, there are 400 childcare facilities in the apartment complexes in Seoul, of which 327 (85%) are private childcare facilities. This is because the resident representative of the apartment complex prefers private childcare facility, since they can obtain a rental income by renting the private childcare facility. Generally, a resident representative of apartment complexes could get about £ 700 a month as a rental fee for private childcare facilities. According to the announcement of the 2016 Childcare Policy in Seoul, it was found that the director, teacher and parent of the private childcare facility in apartment complexes want to change private childcare facilities to public childcare facilities (SMG, 2016).

However, in the case of conversion to public childcare facilities, the requirements of residents and residents' representatives who have the operators of existing facilities have been variously claimed. Typical demands include securing the operating rights after the conversion to public childcare facilities, and compensation for initial investment costs. The requirement of the resident is to ensure that their infants have priority to enter public childcare facilities. Therefore, the government measure is to guarantee the five year operation right to the resident representative who operates the existing facility when the

private childcare facility is converted into the public childcare facility, and that they will continue to receive free rent. After five years, the government can entrust the operation rights through open bidding. The government will amend the statute so that the apartment resident infants have the entrance priority right within 50% of the public child care facility. In addition, the cost of remodelling and equipment is supported differently, depending on the size of the facility, as stated above. Like public childcare facilities, as a manpower support, one assistant teacher and childcare assistant are provided per facility. Once private childcare facilities are converted into public childcare facilities, they must be operated in accordance with government standards, and systematic field inspections are carried out. As a result, the quality of childcare services is enhanced, and this increases the share of public childcare facilities with small burdens.

According to the four central government officials interviewed, apart from this, the government will revise the law to build childcare facilities newly installed in apartment complexes, newly constructed as public childcare facilities. Childcare facilities that are newly installed in new apartment complexes constructed in the future should be built as public childcare facilities.

[Fig 4.4] Regulations for new childcare facilities in apartment complexes (Sample)

<b>Regulations for new installation of childcare facilities in apartment complexes</b>
1. Apartment complexes of more than 300 households are obliged to install a childcare facility.
2. Apartment complexes of more than 500 households are obliged to install a public childcare facility.
3. Apartment complexes built by the government are obliged to install a childcare facility.

※ Source: Interview (2017)

### **4.3.3 Establishment of Public Childcare Facilities inside Public Facilities**

According to a Seoul government official interviewed,

*Considering a densely populated area like Seoul, it is very difficult to find a site for the construction of new public childcare facilities. As an alternative to these problems, it is mandatory to install public childcare facilities in public institution buildings. When constructing or expanding public institution buildings, the Seoul Metropolitan Government (SMG) should first consider installing public childcare facilities. The project targets new buildings, extension buildings, and public buildings that are funded by SMG. Public buildings include community service centres, public libraries, cultural centres, and welfare centres. In particular, this should be reflected at the planning stage of new constructions or extensions of public institution buildings.*

When interviewed by central government officials about the interview contents of the local government officials in Seoul, the respondents answered that two kinds of conditions should be provided for such measures.

*First, it should be installed on the first floor of the building. This is for the smooth entry and exit of infants. Second, it must be more than 50 meters away from any hazardous facilities, such as gas stations.*

As an alternative to solving the problem of securing public childcare facilities, an education official of the central government officials suggested ways to utilize the idle classrooms in the school.

*In recent years, due to the low fertility in Seoul, the number of students has decreased by 20.2% over five years, and the number of classes has decreased by 7.4%. The number of students at school has dropped from 588,000 in 2009 to 469,000 in 2013, which shows a decrease of 119,000. As a result, the number of classrooms in 2009 decreased from 20,682 to 19,149 in 2013, which is down by 1,533. This means that most schools have vacant classrooms that are not in use.*

When it is considered that the location of the school is mostly located where there is a high demand for child care, if you install public childcare facilities in your school's idle classroom, it is a breakthrough that can relieve a significant demand for public childcare facilities. However, since the school thought that the burden of managing public childcare facilities will increase, the principal took a passive stance to the establishment of public childcare facilities. The Seoul Metropolitan Government must grant some incentives to school if the school, such as allowing it to rent a vacant classroom free of charge and set up as a public childcare facility. First, budgetary support is needed, which is the cost of installing the childcare facilities in the vacant classroom and supporting the purchase of equipment. Second, if the school hopes, the government should grant the right to operate childcare facilities for 5 years to the school. After five years, the government can determine the operation rights through open bidding. Lastly, the government should give infants of the school staff the right of admission to the public childcare facility.

#### **4.3.4 Case Study: Seongdong district in Seoul**

Research Question No 4 "How to deal with the problems and obstacles faced by the state in providing public childcare facilities and how to overcome them?" In addition, to discovering ways of increasing the rate of public childcare facility sharing, we conducted a case study where public childcare facility was installed as a public childcare facility in an apartment complex in Seongdong district, Seoul.

In terms of the research methodology used to answer “Research Question No 4, what are the problems and obstacles that the Government faces in providing more public childcare facilities and how might these be overcome?”, I studied the case of installing public childcare facilities instead of private childcare facilities in this public apartment complex, in order to develop measures to increase the share of public childcare facilities, except for the construction of new public childcare facilities that are time-consuming and expensive.

In 2015, Seongdong district took measures to solve the problems that residents complained of, such as expanding public childcare facilities, as the number on the waiting lists in actual public childcare facilities had reached 15,000. As a preliminary

investigation, this large-scale apartment complex with more than 5,000 households was selected and an opinion survey was conducted for all residents. Survey results showed that more than 90% of residents in the apartment complex preferred public childcare facilities. At this time, in Seongdong district, there were 75 childcare facilities in all the apartment complexes, including 3 public child care facilities, which was just 4% of all childcare facilities.

[Table 4.9] Childcare Facilities in Apartment Complex in Seongdong district

The Number of	Total	Public	Private	
			Private	Home
Childcare Facility	75	3 (14%)	72 (86%)	

※ Source: Seongdong district (2017)

Thus, the Seongdong district office planned to set up public childcare facilities as childcare facilities in apartment complexes. The planned target, as of 2015, was that for every 10 apartment complexes under construction, eight would be constructed after 2016, which are a total of 18.

[Table 4.10] Childcare Facilities in Apartment Complex in Seongdong district by Year

The Number of	Total	As of 2015				After 2016
		Subtotal	Complete	Under Construction	Preparing	
Childcare Facility	18	10	3	5	2	8

※ Source: Seongdong district (2017)

In 2015, the Seoul Metropolitan Government and Seongdong district office proceeded with plans to set up a public childcare facility in 18 all new apartment complexes. If Seongdong district set up 18 public childcare facilities as planned, it would save a total budget of 17-million pounds, considering that an average of 1.7-million pounds is needed per public childcare facility. In addition, the share of public sector funding can also be improved.

This plan was implemented through close cooperation between Seoul Metropolitan Government and Seongdong district office. As of 2016, all 10 apartment complexes planned to be built by 2015 had involved consultation with the residents' representatives in relation to installing public instead of private childcare facilities. After 2016, most public childcare facilities were installed in public apartment complexes.



Looking at the case of Seongdong district, it is very important to follow proper procedures. The first step was to conduct a survey of all residents in the apartment complex, which is a prerequisite condition. Through this procedure, the government can have a stepping stone to negotiate with the resident representative by obtaining the opinions of all residents. A resident representative will prefer to install private childcare facilities because they have spent the necessary expenses in the apartment complex through the rent from private childcare facilities. Nevertheless, as a result of surveying the opinions of all households, if more than 90% of the residents preferred a public childcare facility to be built, the resident representative cannot refuse to set up this up.

The second step is consultation and negotiation with the resident representative. This is a vital step in the cause. The resident representative is the representative organization of the residents. Therefore, it is essential for the government to have a planning session with the resident representative. If the planning session has proceeded smoothly, then the government should have a briefing session with residents. All these procedural steps must be documented. This is because the government must cope with various problems that may arise in the future.

The third step is that the government must provide an incentive to replace the rent which would otherwise accrue, for both the resident representative and residents. Despite the fact that residents preferred to set up a public childcare facility, this is because the rental income from leasing the private childcare facility in apartment complexes is used for all residents. Therefore, this part should not be overlooked, as it can bring hostility from some residents. As a budgetary support, an incentive is an apartment complex subsidy which can install or renovate facilities, such as street lamps, a sports facility, or an outdoor parking lot in an apartment complex. In addition, as an incentive for residents, the government have to amend the statute so that the apartment residents' infants have entrance priority rights, with a guarantee of 50% of the public child care facility. Through an appropriate procedure, the government enters into agreements with the resident representative, and then establishes the public childcare facility through procedures such as selection of a consignment operator.

## **4.4 Quality Improvement of Public Childcare**

“Research Question No. 5, what are the ways for quality improvement besides the quantitative expansion of public childcare facilities to reinforce the public childcare?” was conducted by not only a study of various literature reviews, but also semi-structured in-depth interviews and interviews.

### **4.4.1 Realization of facility standards of public childcare facilities**

All four of the interviewees, saw the improvement of the quality of public childcare facilities as requiring the realization of facility standards in this area.

The current standards for the installation of childcare facilities are based on the Infant Care Act. The standard area of childcare facilities is 4.29m<sup>2</sup> per person, which has remained the same since 1991. In particular, the Republic of Korea is the only country in the world where the area standard for each childcare facility is determined by law.

In other countries, the per capita area standards for childcare facilities is just a recommended figure in design guides, designated by central or local government. According to the US GSA (General Services Administration) childcare facility design guide, area standards in childcare facility per person is 8.4 m<sup>2</sup>, which is about twice the size in the Republic of Korea. In the UK, in accordance with the Design Guide of the Ministry of Education and Early Childhood, the recommended area size is 5.3 square meters per person, if the capacity of the facility is 26 or less, and 6.3 square meters per person if the capacity of the facility is 52 or less. In Japan, according to the guidance for the maintenance of childcare facilities in Yokohama City, when determining the area standard for each childcare facility, depending on the size of childcare facility, if the capacity of facility is 60 or less, 9.2 square meters per person is recommended, if the capacity is 90 or less, 8.3 square meters per person is recommended, and if the capacity is 120 or less, 7.5 square meters per person is recommended.

[Table 4.11] International Comparison of Childcare Facility Standards

	Korea	US	UK	Japan
The Standard of Area per person	4.29 m <sup>2</sup> (By Law)	8.4 m <sup>2</sup> (Recommendation)	5.3 ~ 6.3 m <sup>2</sup> (Recommendation)	7.5 ~ 9.2 m <sup>2</sup> (Recommendation)

※ Source: Kim, (2013)

Since 1991, income levels in Seoul have tripled, the housing area has doubled, and population policy has changed from birth control to birth promotion. Therefore, the area standard of 4.29 square meters per person introduced in 1991 has increased by 20 times, including improvements in income level (about 3 times), the expansion of residential areas (about 2 times), and population policy change. It is necessary to recognise these changes in social and economic conditions. Therefore, the area standard of 4.29 square meters per person, introduced in 1991 needs to be adjusted as a result, by expanding of the living space and making suitable changes to population policy.

#### 4.4.2 Improvement of Indoor Air Quality in public childcare facilities

Improvement of indoor air quality in public childcare facilities was also agreed to be important by all four childcare facility directors.

Improperly uncontrolled indoor air can be an important health threat to a health-sensitive group that has a weak immune system and spend much time indoors, like infants in childcare facilities. Breathing air volume per infant is more than twice that of adults, on average, and the respiratory organs are not fully developed, so contaminants in the inhaled air can cause health problems for infants. In particular, childcare facilities are indoor spaces where infants to spend more time than with their families. According to Seoul Metropolitan Research Institute's 2015 Indoor Air Quality Measurement, most of the childcare facilities exceeded the standards of pollutants such as CO<sub>2</sub>, PM<sub>10</sub>, and VOC. It was also revealed that the source of pollutants was not external, but from internal (SMRI, 2015). Both VOC and Formaldehyde are common examples found in building materials, furniture and educational items for childcare facilities.

The removal of pollutants in these environments through the use of eco-friendly architecture, furniture, and educational supplies besides plenty of ventilation and cleaning, is essential. In addition, facilities that have architectural structural problems that are inappropriate for natural ventilation, or facilities adjacent to sources of external pollutants, should be made into structures without problems, where possible, and mechanical ventilation facilities should be installed to ensure sufficient ventilation, if not. Above all, it is vital to use eco-friendly building materials from the beginning of childcare facilities construction.

## **Chapter 5: Conclusion**

### **5.1 Conclusion**

This dissertation has aimed to identify strategies for increasing the share of public childcare facilities for sustainable urban growth. To this end, it starts by reviewing the literature on population growth, low fertility and urban growth. In addition, the countermeasures against low fertility and the necessity of public childcare have been studied through the literature review.

As we have seen in this paper, the demand for public childcare in South Korea is rapidly increasing, while the childcare facilities constitute only 12% of all childcare facilities, so this lower share is the biggest problem. Furthermore, the inability to meet the needs of women in the workplace is the biggest cause of low fertility, and the low fertility situation is obstructing sustainable urban growth.

First of all, the results of the research were derived from the literature on policy changes in other countries, formed to solve the problem of low fertility. The recent situations in France, Sweden, the UK, and Japan, in which a low fertility crisis was addressed and overcome, have been presented. As shown in the results of the study show, it is common to all countries that a low fertility crisis is related to the share of public childcare, including where the childcare budget, is much higher than Korea's. In addition,

another common denominator in overcoming this problem is that childcare has been recognized as a having social, collective role by governments in their implemented policies.

Second, according to the results of surveys conducted to compare the strengths and weaknesses of public childcare facilities in relation to private childcare facilities, which illustrated that the satisfaction levels of parents who sent their children to public childcare facilities was significantly higher than for parents who sent their children to private childcare facilities, in all fields of the childcare environment, including childcare programs, childcare teachers and childcare facilities management. The high level of parental satisfaction strongly suggests that public childcare facilities are perceived to be superior to private childcare facilities in quality.

Third, we can refer to two major findings of the research on the problems and obstacles faced by the government in the construction of new public childcare facilities through expert interviews. One is the enormous government budget, time needed, and difficulty of securing sites. Another is the resistance of private childcare facilities management, who believe they will lose out financially from such changes.

Fourth, it is recommended that existing private childcare facilities be converted into public childcare facilities, which can coexist with existing private childcare facilities. Another suggestion is to convert private childcare facilities in public apartment complexes into public childcare facilities or to install public childcare facilities from the beginning. The other is to prioritize the establishment of public childcare facilities in the case of constructing and expanding public institution buildings.

Finally, in addition to the quantitative expansion of public childcare facilities, a measure to improve the quality of childcare is to realize the standards for the establishment of public childcare facilities enacted 30 years ago. In addition, there should also be a concerted effort to improve indoor air quality in public childcare facilities for the health of infants.

## **5.2 Suggestion and Evaluation of Methodology**

One policy recommendation I make as a result of this study is that it is necessary to continuously expand public childcare facilities in order to improve the childcare environment of private centres and expand the public childcare share. In addition, qualitative improvements should be made in addition to the quantitative improvement in childcare facilities.

The methodology of this study was to secure considerable reliability and expertise that could be immediately applied to the field through interviews with public officials and the childcare facilities director currently working in the city .

On the other hand, due to the methodological limitations, it is necessary to pay attention to the following points. First, the survey on public and private childcare facilities was conducted in only child care facility in Seoul, so it is difficult to generalise from it findings. Second, although only small sample of interviewees were used, the reliability is high: however, there is a possibility that the views expressed may not be representation of the wider professional community. It would be possible to secure more representative representativeness through additional sample surveys, with a greater time margin. Third, this study focuses on the quantitative expansion of public childcare facilities and needs to be supplemented to secure sufficient research results on qualitative expansion. In order to overcome the methodological limitations of the study, it is anticipated that the planning and execution of follow - up research will be improved.

## Reference

Clarke-Stewart, A. (1992). Consequences of childcare one more time, a rejoinder. In A Booth(Ed), *Childcare in the 1990s trends and consequences*, Lawrence Erlbaum Associates, Publishers, NH; Hillsdale.

Coleman, D. (2006). Immigration and Ethnic Change in Low-Fertility Countries: A Third Demographic Transition, *Population and Development Review*, Vol 32, Issue 3, pp. 401-446.

Die Zeit. (2014). Absage an den Untergang, *Economy Insight*, Issue 7.

Doopedia.(2017). Urban Problem, Naver Intelligent Encyclopedia, [Online] Retrieved from "<http://terms.naver.com/entry.nhn?docId=1083116&cid=40942&categoryId=31637>", [Accessed 10/04/2017]

Dorling, D. (2013). *Population 10 Billion : The Coming Demographic Crisis and How to Survive It*, London : Constable, pp. xii-438.

Economy Insight (2016). China without Children, *Weekly Newspaper JeaSin*, 39 issues.

Ehrlich, P. E. & Ehrlich, A. H. (2009). The Population Bomb Revisited, *The Electronic Journal of Sustainable Development*, pp. 5-11.

Farquhar, J. D. (2012). What is Case Study Research?. In: *Case Study Research for Business*. London: SAGE Publications, pp. 3-14.

GSA. (2017). Childcare Facility Design Guidelines.[Online] Retrieved from "<https://www.gsa.gov/portal/category/100000>" [Accessed 12/06/2017].

Howes, C. & Marx, E. (1992). Rasing Questions about improving the Quality of childcare in the United States and France, *Early Childhood Research Quarterly*, pp. 347-366.

Joo, S. Y. (2010). How to solve the low birth rate crisis?, *The Data of inspections of S. Korea Government offices*, pp, 9-11.

Kim, S. H (2015). Improvement of the system for quantitative expansion and quality improvement of public childcare facilities, *Seoul Economy Newspaper*, pp. 15-24.

- Kim, S. J. (2010). How will Seoul respond to the low birth rate?, The Seoul Institute, Issue 55.
- Kim, S. J. (2011). Characteristics of Low Fertility Period and Urban Policies, Urban Affairs, pp. 11-15.
- Kwon, C. S. (2014). A Study on the Policy for Increasing the Public Childcare Centers, The University of Hanyang.
- Kwon, M. K. (2016). Child Care Policy in European Countries and Implications, Korea
- Lee, J. S. (2015). A Study on the Operational Efficiency of Public Childcare Centers, The university of Dankuk
- Lee, Y. L. (2000). A Study on the Problems of Korean Childcare Policy, The University of Deajeon.
- Lee, Y. W. (2011). The Impact of Low Fertility Aging on the City, Urban Affairs, pp. 30-35.
- Malthus, T. R. (1798). An Essay on the Principle of Population, J. Johnson, London.
- Max, R. (2017). Future World Population Growth, Our World in Data [Online] Retrieved from " <https://ourworldindata.org/future-world-population-growth>" [Accessed 11/05/2017].
- MHW. (2017). Infant Care Act 2016, Ministry of Health and Welfare [Online] Retrieved from "<http://www.mohw.go.kr/eng/index.jsp>" [Accessed 12/05/2017].
- Morgan, S. P. (2003). Is Low Fertility a Twenty-First-Century Demographic Crisis?, Demography, November 2003, Vol. 40, Issue 4, pp. 589-603.
- NSO. (2017). Childcare statistics, National Statistical Office in South Korea, [Online] Retrieved from "<http://kostat.go.kr/portal/eng/index.action>" [Accessed 18/05/2017].
- NSO. (2014). Employment survey statistics by region, [Online] Retrieved from "<http://kostat.go.kr/portal/eng/index.action>" [Accessed 11/06/2017].
- NSO. (2017). Total Fertility Rate in South Korea, and Other Nations [Online] Retrieved from "<http://kostat.go.kr/portal/eng/index.action>" [Accessed 11/04/2017].



Ock, R. (2007). Childcare Policy in Korea: Current Status and Major Issues, *International Journal of Childcare and Education Policy*, Issue 1, pp. 59-72. [Online] Retrieved from "<https://link.springer.com/article/10.1007/2288-6729-1-1-59>" [Accessed 18/05/2017].

Park, J. H. (2002). *A Study on the Relationship between Home Environment and Childcare Environment and Social Capacity of Children*, The University of Yeonseo..

Seoul City Council. (2015). *Report of the Investigation on Public childcare Facilities by Seoul City Council*, Seoul: Seoul City Council.

SMG. (2016). *Childcare facility waiting status in 2016*, Seoul: Seoul Metropolitan Government.

SMG. (2016). *Report on Asbestos Removal Project for the Improvement of Childcare Facility Environment*, Seoul: Seoul Metropolitan Government.

SMG. (2012). *Report on Strategies for Expanding Public Childcare Facilities in 2011*, Seoul: Seoul Metropolitan Government.

SMG. (2013). *Report on Strategies for Expanding Public Childcare Facilities in 2012*, Seoul: Seoul Metropolitan Government.

SMG. (2014). *Report on Strategies for Expanding Public Childcare Facilities in 2013*, Seoul: Seoul Metropolitan Government.

SMG. (2015). *Report on Strategies for Expanding Public Childcare Facilities in 2014*, Seoul: Seoul Metropolitan Government.

SMG. (2016). *Report on Strategies for Expanding Public Childcare Facilities in 2015*, Seoul: Seoul Metropolitan Government.

SMG. (2017). *Report on Strategies for Expanding Public Childcare Facilities in 2016*, Seoul: Seoul Metropolitan Government.

Smith, L. M. (1978). An Evolving Logic of Participant Observation, *Educational Ethnography and Othe Case Studies. Review of Reserch in Education*, Volume 6, pp. 316-377.

Stake, R. (1995). *The Art of Case Study*. London: SAGE Publications.

Szlei, & Liang, J. (2016). Two-Child Policy' Not Enough to Halt China's Plunging Fertility Rates, *Caixin Journal in China* [Online] Retrieved from " <http://www.caixinglobal.com/2016-11-03/101003748.html>" [Accessed 28/05/2017].

The Guardian. (2013). Population 10 Billion by Dorling and Ten Billion by Stephen Emmott The Guardian article, Issue 5 July 2013.

The Guardian. (2017). Want to fight climate change? Have fewer children. The Guardian article, Issue 12 July 2017.

Wynes, S. & Nicholas, K. A. (2017). The Climate Mitigation Gap: Education and Government recommendations miss the most effective individual actions, *Environmental Research Letters*, pp. 2-9.

Yang, M. S. (2015). Establishment and Operation Status of Public Houses in Seoul, Korea Institute of Childcare and Education, pp. 3-12.

Yon, H. B. & Noh, H. W. (2016). Already OECD lowest, South Korea's Birthrate getting worse, *The Hankyoreh* [Online] Retrieved from "[http://english.hani.co.kr/arti/english\\_edition/e\\_national/758664.html](http://english.hani.co.kr/arti/english_edition/e_national/758664.html)" [Accessed 22/05/2017].

World Bank. (2017). Public Data, Google [Online] Retrieved from " [http://www.google.co.kr/publicdata/explore?ds=d5bncppjof8f9\\_&met\\_y=sp\\_dyn\\_tfrt\\_in&idim=country:FRA:DEU:GBR&hl=ko&dl=ko#!ctype=1&strail=false&bcs=d&nselm=h&met\\_y=sp\\_dyn\\_tfrt\\_in&scale\\_y=lin&ind\\_y=false&rdim=region&idim=country:FRA&ifdim=region&hl=ko&dl=ko&ind=false](http://www.google.co.kr/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_dyn_tfrt_in&idim=country:FRA:DEU:GBR&hl=ko&dl=ko#!ctype=1&strail=false&bcs=d&nselm=h&met_y=sp_dyn_tfrt_in&scale_y=lin&ind_y=false&rdim=region&idim=country:FRA&ifdim=region&hl=ko&dl=ko&ind=false)" [Accessed 18/05/2017].

## Appendix 1. Interview Questions

### **Analysis on the Strategy for Increasing the Share of Public childcare facility for Sustainable urban growth**

Hello.

My name is Chu-Hwan Chun and I am studying for a Master's degree in Urban Studies and Planning at the University of Sheffield in the UK.

Currently, I am working on a dissertation entitled "A Study on the Strategy for Increasing the Share of Public childcare facility for Sustainable urban growth" which is designed to be conducted through expert interviews.

The purpose of this study is to find strategies to achieve the expansion of public childcare facilities in Seoul as an active solution to solve urban problems of low fertility that impedes sustainable urban development

Your responses will be anonymised and will only be used for research purposes, so please feel free to express your opinions about being involved, directly or indirectly, in the plan to expanding public childcare facilities.

As this interview is conducted through email and telephone because of geographical limits, it might be constrained to obtain your opinions in detail. Therefore, please allow yourself decent time to answer these questions on the basis of your experiences and knowledge so that they are fully reflected. This would be very helpful for this research. Thank you.

May 2017

Researcher: Chu-Hwan Chun

Contact: [jhchen@naver.com](mailto:jhchen@naver.com) / +447482707990

**Now, I will begin the interview. All the questions are subjective so your answers should be written in open-ended forms.**

**When answering the questions, giving the specific basis and grounds for your responses would be highly appreciated.**

**The research objective is summarized as follows:**

**What are the strategies to increase the share of public childcare facilities for sustainable urban development?**

**Q1.**

**What are the problems and obstacles to the expansion of childcare facilities?**

**Q2.**

**What are the ways to increase the share of public childcare facilities in addition to the construction of public childcare facilities that require a lot of time and budget?**

**Q3.**

**What are the measures for quality improvement besides the quantitative expansion of public childcare facilities to reinforce the public childcare?**

## **Appendix 2. Parent Satisfaction Survey**

### **Analysis on the Strategy for Increasing the Share of Public childcare facility for Sustainable urban growth**

Hello.

My name is Chu-Hwan Chun and I am studying for a Master's degree in Urban Studies and Planning at the University of Sheffield in the UK.

Currently, I am working on a dissertation entitled "A Study on the Strategy for Increasing the Share of Public childcare facility for Sustainable urban growth" which is designed to be conducted through expert interviews.

The purpose of this study is to find the direction of development for improving the quality of childcare service by grasping the satisfaction of the childcare facilities recognized by the parents who are the consumers of the childcare facilities.

Your responses will be anonymised and will only be used for research purposes, so please feel free to express your opinions about being involved, directly or indirectly, in the childcare facilities.

As this interview is conducted through email because of geographical limits, it might be constrained to obtain your opinions in detail. Therefore, please allow yourself decent time to answer these questions on the basis of your experiences and knowledge so that they are fully reflected. This would be very helpful for this research. Thank you.

May 2017

Researcher: Chu-Hwan Chun

Contact: [jhchen@naver.com](mailto:jhchen@naver.com) / +447482707990

**Q1. General Situation: What is the relationship with the child?**

**Q2. Satisfactory of Childcare Environment Field**

[ Very satisfied(important) as 5 points, totally unsatisfactory(not important) as 1 point ]

<b>Childcare Environment Field</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Lighting, Heating and Air Conditioning					
2. Bathroom, Wash basin					
3. Meal, Food, Snack					
4. Secure Facility					
5. Education Supplies					

**Q3. Satisfactory of Childcare Program Field**

<b>Childcare Program Field</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Adequacy of Childcare Programs.					
2. Parental Participation, Counselling					
3. Extracurricular Activities					
4. Field Trips					
5. Health Check-Ups					

#### **Q4. Satisfactory of Childcare Teacher Field**

<b>Childcare Teacher Field</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Kindness					
2. Expertise					
3. Community with Parents					
4. Childcare Plan Implementation					
5. Courtesy					

#### **Q5. Satisfactory of Childcare Facility Management Field**

<b>Childcare Facility Management Field</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Financial Transparency					
2. Appropriateness of Childcare Fees					
3. Treatment of Suggestions					
4. Transparency of Facility Operation					
5. Expertise of Director					