

## A Study on the Using State of Cremation Facilities in Each Jurisdiction Area and Outside of the Jurisdiction Area Targeting Users of Online Cremation Reservation Service in Funeral Information System in the Capital Area

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### Abstract

*On the basis of 2017, the cremation rate in capital area was 89.0% which was much higher than the national average cremation rate(84.6%). Due to the short supply of cremation facilities in accordance with the increased number of cremation cases every year, the demand for cremation from the residents outside of the jurisdiction area with no cremation facilities was increased, so that the residents in the jurisdiction area had difficulties in using the Online Cremation Reservation Service in Funeral Information System. Thus, this study aims to make suggestions for policies as follows. First, on the basis of 2017, the demand-supply rate of cremation facilities in Gyeonggi-do was 139.4%, which means that the demand for cremation largely exceeds the ability to supply cremation. Therefore, first, in the level of Gyeonggi-do, the expanded supply of cremation facilities should be induced by carrying forward policies such as financial support to the basic local governments installing cremation facilities and expansion of incentives support to the residents of regions attracting cremation facilities. Second, it would be necessary for the central government to expansively conduct the support standard price and government subsidy rate(70%) for the new construction of cremation facilities and the establishment of cremation furnaces. Third, there should be some policies to decrease the inflow of residents outside of the jurisdiction area by raising the fee for using cremation facilities outside of the jurisdiction area of Seoul Metropolitan City and also expanding the application of a sliding scale of cremation hours.*

**Keywords:** Funeral Information System, Cremation Facilities, Jurisdiction Area, Death Bodies, Cremation Rate

### 1. Introduction

Since January 1<sup>st</sup> 2011, the users of cremation facilities in the whole nation have used the Online Cremation Reservation Service in Funeral Information System established by the Ministry of Health and

Welfare to unify the cremation reservation of all the cremation facilities in the whole nation [1]. Also, each local government should be equipped with cremation facilities to meet the local residents' demand for cremation under the 「Act on Funeral Services, etc.」, with a duty to establish the local demand-supply plan about the demand and supply of cremation facilities in the jurisdiction area every five years.

With the recent increase of national cremation rate and facing the entry to the super-aged society, the users of cremation facilities using the Online Cremation Reservation Service in Funeral Information System have been continuously increased due to the increased number of death in accordance with the increase of elderly population. Especially, focusing on big cities such as capital area and Busan Metropolitan City with high density of population, the short supply of cremation facilities compared to the demand for cremation is intensified.

On the basis of December 2018, out of the total population (51,826,059) of Korea, the population of capital area is 25,797,418[2] that are 49.8% of the whole. However, regarding the cremation furnaces as the cremation facilities, it only has 89 cremation furnaces out of total 350 cremation furnaces in the whole nation, which is only 25.4% of the whole%)[3]. Therefore, due to the short supply of cremation facilities, more and more residents outside of the jurisdiction area without cremation facilities use the cremation facilities in the jurisdiction area by using the Online Cremation Reservation Service in Funeral Information System, so that the residents in the jurisdiction area cannot reserve the cremation in the time zone desired, and they have to go to other areas to use cremation facilities.

Therefore, this study aims to make suggestions for policies to improve the efficiency of operation of cremation facilities in capital area by considering the actual condition of using cremation facilities in capital area by using the Online Cremation Reservation Service in Funeral Information System targeting the residents in the jurisdiction area and outside of the jurisdiction area during the period from 2011 to 2018 when the unified integrated cremation reservation system was fully operated in the whole nation.

## 2. Status of Cremation in the Capital Area

On the basis of 2017, in the current status of cremation rate in each capital area, Incheon Metropolitan City was the highest (92.4%), which was followed by Seoul Metropolitan City (88.8%), and Gyeonggi-do (88.3%) in order. And the cremation rate of the whole capital area was 89.0%. Thus, the cremation rate of capital area was about 4.4% higher than the national average cremation rate (84.6%)[4].

**Table 1. Status of Cremation in the Whole Nation and Capital Area (2017 Year)**

Sort	Whole Nation	Capital Area			
		Sum	Seoul	Gyeonggi-do	Incheon
Death Bodies(Person)	285,534	114,074	42,932	56,852	14,290
Number of Cremated Bodies(Person)	241,665	101,560	38,141	50,212	13,207
Cremation Rate(%)	84.6	89.0	88.8	88.3	92.4

### 3. Status of Cremation Facilities in the Capital Area

On the basis of 2018, in 17 regional local governments in the whole nation, there were total 59 cremation facilities and total 350 cremation furnaces. On the basis of 2017, the number of cremated bodies was 241,665 out of total death (285,534) while the national cremation rate was 84.6%. Also, regarding the local governments in capital area such as Seoul Metropolitan City, Gyeonggi-do, and Incheon Metropolitan City, there were total six cremation facilities, 89 cremation furnaces, and 101,560 cremated person[4].

**Table 2. Status of Cremation Facilities in the Capital Area**

Sort		Cremation Facilities(Place)	Cremation Furnaces(Set)	Number of Cremated Bodies 2017 Year(Person)
Whole Nation		59	350	241,665
Capital area	Sum	6	89	101,560
	Seoul	2	34	38,141
	Gyeonggi-do	3	35	50,212
	Incheon	1	20	13,207

The calculated rate of cremation supply ability case for ordinary bodies compared to the number of cremated person of ordinary bodies based on the number of cremated person (limited to ordinary bodies except for remains digged out from graves and stillborn babies) using cremation facilities out of death, is called the demand-supply rate of cremation facilities, and the formula is as follows.

$$\text{Demand-Supply Rate of Cremation Facilities} = (\text{Number of Cremated Ordinary Bodies} \div \text{Cremation Supply Ability case for Ordinary Bodies}) \times 100 \quad [\text{Unit : \%}]$$

In the results of calculating the demand-supply rate of cremation facilities in capital area, on the basis of 2017, Gyeonggi-do was the highest (139.4%), which was followed by Seoul Metropolitan City (74.3%), and Incheon Metropolitan City (50.0%) in order. Therefore, it would be urgently needed to expand the cremation facilities in Gyeonggi-do[4].

**Table 3. Demand-Supply Rate of Cremation Facilities in the Capital Area**

Sort		Sum	Seoul	Gyeonggi-do	Incheon
Number of Cremated Ordinary Bodies(Person)	One Day	278	104	138	36
	Annual	101,560	38,141	50,212	13,207
Cremation Supply Ability for Ordinary Bodies(Person)	One Day	311	140	99	72
	Annual	113,515	51,100	36,135	26,280
Demand-Supply Rate of Cremation Facilities(%)		89.4	74.3	139.4	50.0%

### 4. Using State of Cremation Facilities Each Jurisdiction Area and Outside of the Jurisdiction in the Capital Area

### 4.1 Seoul Metropolitan City

During the research period of this study, the residents in the jurisdiction area using the cremation facilities of Seoul Metropolitan City are average 32,730 persons for a year, which is 71.9% of the whole number of cremated person. The number is continuously increasing every year except for 2017. On the other hand, the average number of users for a year out of the residents outside of the jurisdiction area is 12,796, which is 28.1% of the whole number of cremated person [5]. The increase and decrease are irregularly showing every year.

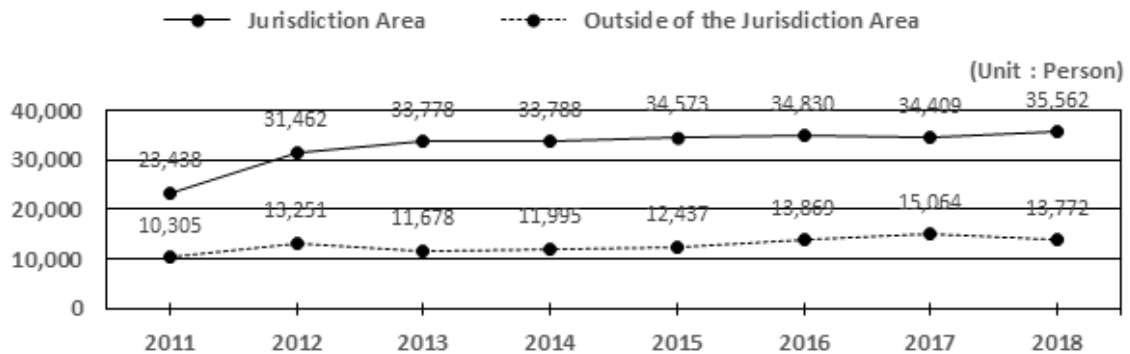


Figure 1. Using State of Cremation Facilities in Each Jurisdiction Area and Outside of the Jurisdiction Area

The rate of residents in the jurisdiction area using the cremation facilities of Seoul Metropolitan City was the highest(74.3%) in 2013, which was followed by 2014(73.8%), and 2015(73.5%) in order. Also, the rate of residents outside of the jurisdiction area was shown high in the order of 2011(30.5%), 2017(30.4%), and 2012(29.6%).

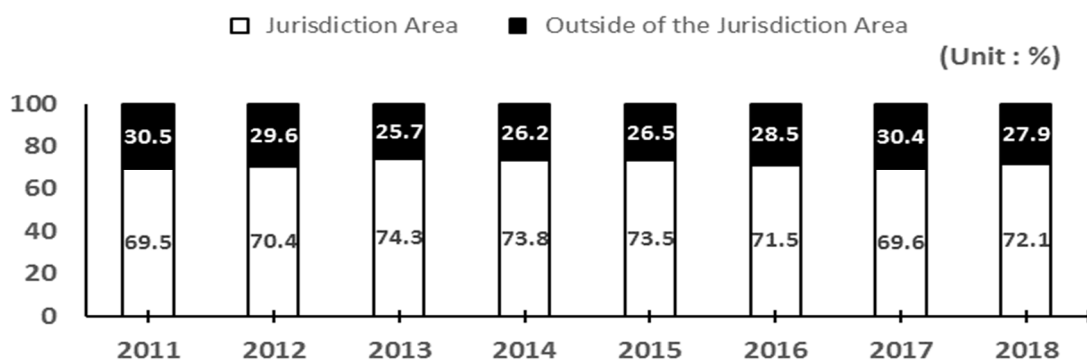
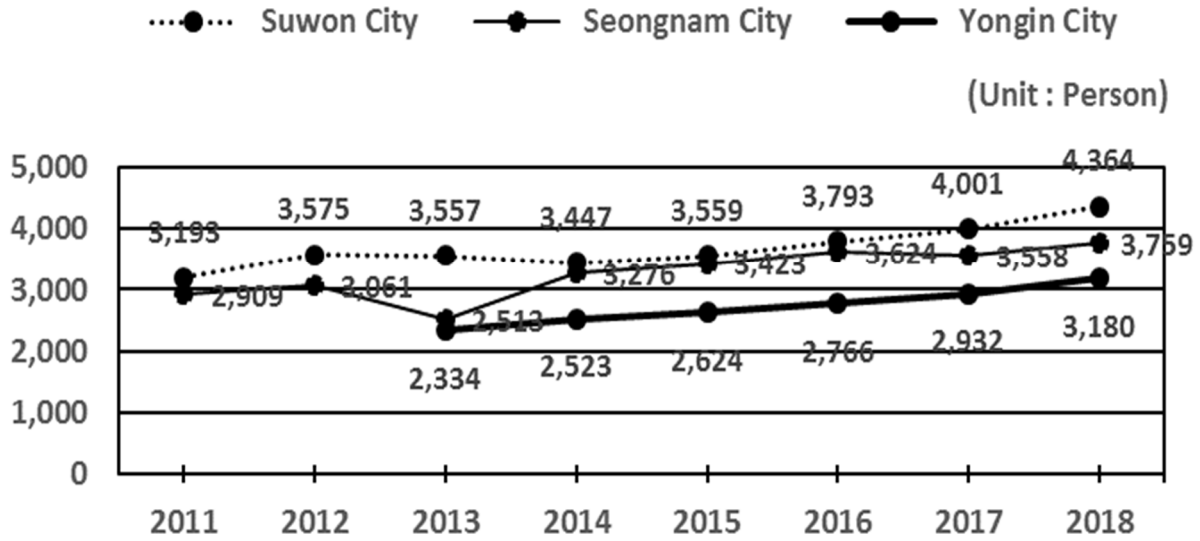


Figure 2. Using Distribution Ratio of Cremation Facilities in Each Jurisdiction Area and Outside of the Jurisdiction Area

### 4.2 Gyeonggi-do

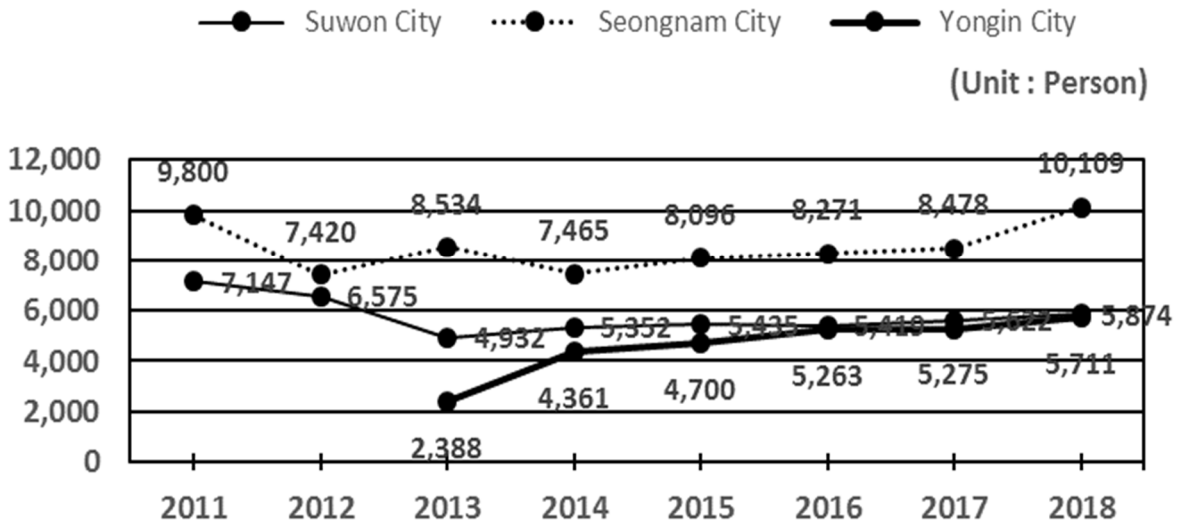
Out of 31 basic local governments in Gyeonggi-do, only three basic local governments such as SuwonCity, SeongnamCity, and YonginCity have operated the cremation facilities. Overall, in case of Suwon City and SeongnamCity, the number of cremation was a bit decreased after the cremation facilities in YonginCity were newly established/open on January 2<sup>nd</sup> 2013. However, it has been continuously increased since 2014. Also, in case of YonginCity, the number of cremation has been continuously increased so far since the

opening on January 2<sup>nd</sup> 2013. During the research period from 2011 to 2018, the number of users of three cremation facilities in Gyeonggi-do was total 214,198, including total 71,971(33.6%) residents in the jurisdiction area of the basic local governments with cremation facilities, and total 142,227(66.4%) residents outside of the jurisdiction area. On the basis of 2018, regarding the number of cremated residents in the jurisdiction area, SuwonCity(4,364 person) was the highest, which was followed by SeongnamCity (3,759), and YonginCity(3,180) in order.[6, 7, 8].



**Figure 3. Using State in JurisdictionArea by Cremation Facilities**

On the other hand, regarding the number of cremated residents outside of the jurisdiction area, SeongnamCity (10,109 person) was the highest, which was followed by SuwonCity (5,874), and YonginCity(5,711) in order[6, 7, 8].



**Figure 4. Using State in Outside of the Jurisdiction Areaby Cremation Facilities**

Regarding the yearly average rate of using three cremation facilities in Gyeonggi-do by the residents in the jurisdiction area, SuwonCity(38.9%) was the highest, which was followed by YonginCity(37.1%), and SeongnamCity(27.7%) in order. Also, since 2014, the number of cremation of the residents in the jurisdiction area has been increasing every year due to the increase of cremation rate and the number of death.

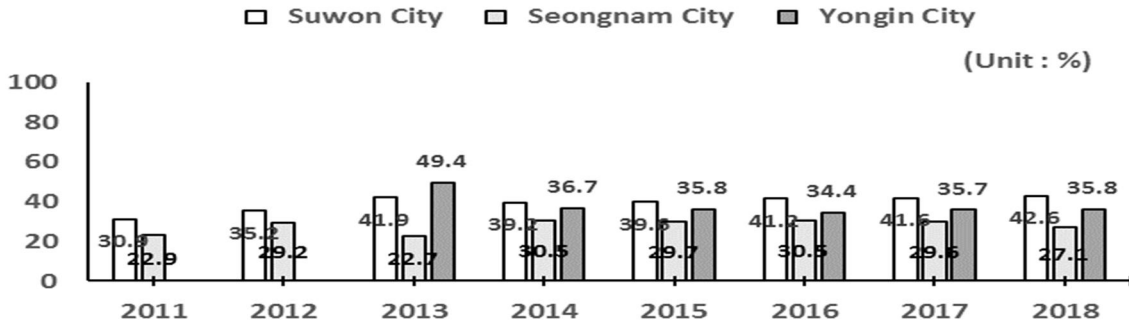


Figure 5. Using Distribution Ratio of Cremation Facilities in Each Jurisdiction Area

Regarding the yearly average rate of using three cremation facilities in Gyeonggi-do by the residents outside of the jurisdiction area, SeongnamCity(72.3%) was the highest, which was followed by YonginCity(62.9%), and SuwonCity(61.1%) in order.

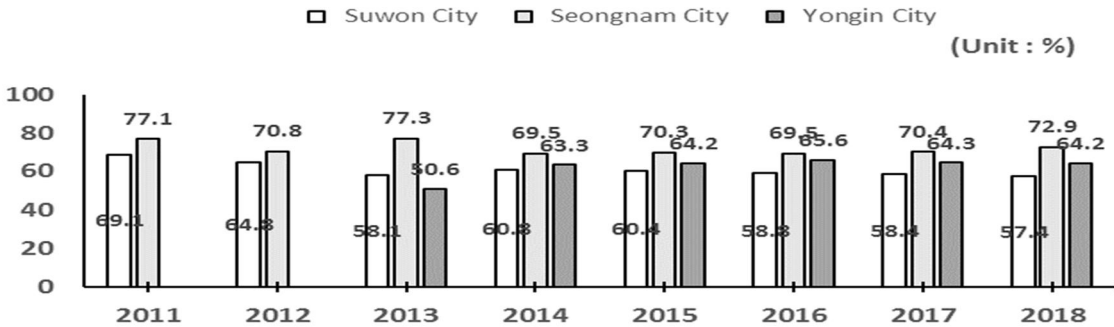
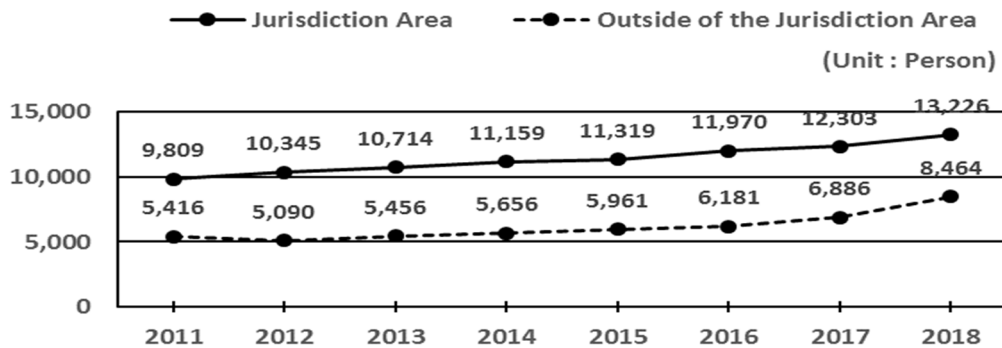


Figure 6. Using Distribution Ratio of Cremation Facilities in Each Outside of the Jurisdiction Area

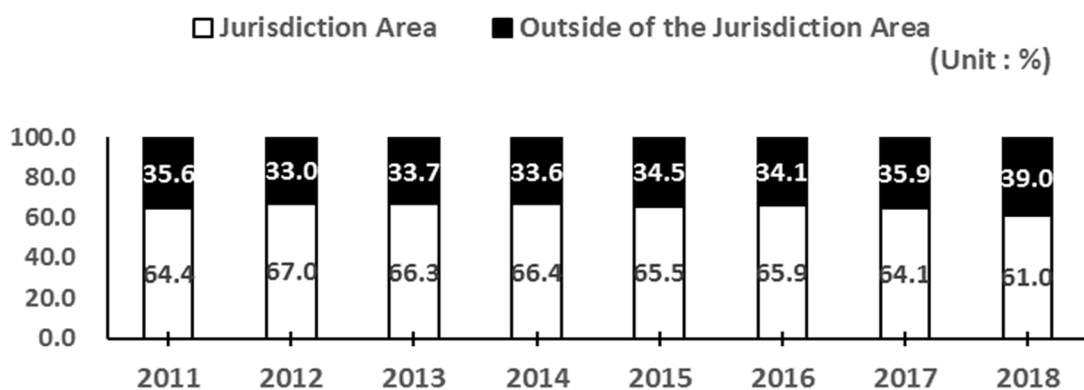
### 4.3 Incheon Metropolitan City

The number of users of cremation facilities in Incheon Metropolitan City is increasing every year. The yearly average number of users was 17,494, including 11,355(64.9%) residents in the jurisdiction area, and 6,139(35.1%) residents outside of the jurisdiction area[9].



**Figure 7. Using State of Cremation Facilities in Each Jurisdiction Area and Outside of the Jurisdiction Area**

The rate of residents in the jurisdiction area using the cremation facilities in Incheon Metropolitan City was the highest in 2012(67.0%), which was followed by 2014(66.4%), and 2013(66.3%) in order. On the other hand, the rate of residents outside of the jurisdiction area was shown high in the order of 2018(39.0%), 2017(35.9%), and 2011(35.6%).



**Figure 8. Using Distribution Ratio of Cremation Facilities in Each Jurisdiction Area and Outside of the Jurisdiction Area**

## 5. Conclusion

In the results of this study, due to the short supply of cremation facilities caused by the increase of cremation rate and the number of cremation in capital area, the residents in the jurisdiction area had difficulties in using the Online Cremation Reservation Service in Funeral Information System in accordance with the increased demand for cremation from the residents outside the jurisdiction area without cremation facilities. Therefore, in order to solve this problem, this study aims to present the suggestions for policies as follows. First, on the basis of 2017, the demand-supply rate of cremation facilities in Gyeonggi-do was 139.4%, which means that the demand for cremation would largely exceed the ability to supply cremation. With the great increase of using cremation facilities in Seoul Metropolitan City and Incheon Metropolitan City by the residents of Gyeonggi-do, on the basis of 2018, the rate of use by the residents outside of the jurisdiction area was 27.9% in Seoul Metropolitan Area, and 39.0% in Incheon Metropolitan City, which is pointed out as a main cause for the short supply of cremation facilities in the whole capital area[10]. In order

to solve this problem, in the level of Gyeonggi-do as a regional local government, there should be active efforts for expanding the supply of cremation facilities by carrying forward policies such as financial support to the basic local governments installing cremation facilities and expansion of incentives support to the residents of regions attracting cremation facilities. Second, in regard of local governments lacking in supply compared to the demand for cremation such as Seoul Metropolitan City and Gyeonggi-do, the central government should expand the supply of cremation facilities through financial support, by expansively paying the existing support standard price and government subsidy rate(70%)[11] in grades for the new construction of cremation facilities and the establishment of cremation furnaces. Third, due to the increased residents of Gyeonggi-do using the cremation facilities of Seoul Metropolitan City, on the basis of 2017, only 34,141 out of total cremated Seoul citizens (38,141) used the cremation facilities of Seoul Metropolitan City while 3,732 citizens(9.8%) went through inconveniences of using the cremation facilities in other areas by paying expensive cremation fees as they could not reserve the cremation in the time zone desired. Thus, there should be some policies to decrease the inflow of residents outside of the jurisdiction area by raising the fee for using cremation facilities outside of the jurisdiction area of Seoul Metropolitan City and also expanding the application of a sliding scale of cremation hours for the residents outside of the jurisdiction area.

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