

A Study on the Actual Utilization Status of Public Cremation Facilities in Each Metropolitan City by Citizens in the Jurisdiction Area and out of the Jurisdiction Area with the Use of e-Haneul Funeral Information System

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Abstract

We are based on the results of this study, the policy measures for improving the efficiency of supply & demand policy of public cremation facilities in six metropolitan cities in the whole nation could be suggested as follows. First, when the utilization rate of public cremation facilities by citizens out of the jurisdiction area was lower, the overall demand for cremation was high. Therefore, the supply & demand policy of public cremation facilities should be carried forward by preferentially focusing on Busan Metropolitan City(4.1%) and Daegu Metropolitan City(17.9%) with low utilization rate by citizens out of the jurisdiction area. Second, the utilization variance of public cremation facilities in the whole six metropolitan cities in the whole nation, was insignificant(1.4%). Therefore, for the efficiency of supply & demand policy of cremation facilities in those six metropolitan cities, the customized-policies considering the characteristics of each metropolitan city should be carried forward in priority. Third, on the basis of 2018, the population size of those six metropolitan cities in the whole nation is from minimum 1.15million to maximum 3.39million as a large city, and relatively, they are facing many difficulties in the expansion for supply & demand of cremation facilities. Therefore, for the smooth construction of cremation facilities, it would be necessary to enforce policies that could disperse the demand for cremation through the joint construction of cremation facilities with other local governments close to each metropolitan city.

Keywords: *e-Haneul Funeral Information System, Metropolitan City, Public Cremation Facilities, Cremated Bodies, Utilization Rate.*

1. Introduction

In order to reserve the cremation for the use of cremation facilities, Korean people have used e-Haneul Funeral Information System which is an integrated cremation reservation system established by the Ministry

of Health and Welfare since 2011[1].

After the national cremation rate of Korea(52.6%) started surpassing the burial rate for the first time in 2005, Korea became an advanced country of cremation with the national cremation rate as 84.6% in 2017[2]. Also, facing the recent increase of national cremation rate and the entry to the super-aged society, due to the increase of death bodies in accordance with the increase of aged population, the users of cremation facilities using e-Haneul Funeral Information System have been continuously increasing. Especially, focusing on large cities with large population size and high density, the shortage of cremation facilities compared to the demand for cremation gets intensified [3].

According to the announcement by the Ministry of Health and Welfare, Busan Metropolitan City will be lacking in four sets of cremation furnaces of public cremation facilities, and Daegu Metropolitan City will be lacking in one set of cremation furnaces in the estimate of future demand and supply of 2022[4]. Also, on the basis of 2018, the population size of those six metropolitan cities in the whole nation is from minimum 1.15million to maximum 3.39million as a large city[5], and relatively, they are facing many difficulties in the expansion for supply & demand of cremation facilities. Thus, for the comparative analysis on the actual utilization state of public cremation facilities by citizens in the jurisdiction area and out of the jurisdiction area focusing on large cities of Korea, this study selected the six major metropolitan cities in the whole nation as the research subjects, and also selected the period from 2013 when Ulsan Metropolitan City built the public cremation facilities at last of those six metropolitan cities, to 2018 as the research period.

In this study, the citizens in the jurisdiction area mean the citizens that have the citizen registration address in the relevant local government (metropolitan city) when using the public cremation facilities while the citizens out of the jurisdiction area mean the citizens who live out of the jurisdiction area.

The objective of this study was to make policy suggestions for improving the efficiency of supply & demand policy of public cremation facilities through the comparative analysis on the actual utilization state of public cremation facilities using e-Haneul Funeral Information System, targeting the citizens in the jurisdiction area and out of the jurisdiction area in six metropolitan cities in the whole nation.

2. Current Status of Public Cremation Facilities in Each Metropolitan City

On the basis of October 31st 2019, there were total 77 sets of cremation furnaces in six public cremation facilities operating in the six metropolitan cities in the whole nation while the one-day processing capability of corpses was total 262 persons. Also, among the six metropolitan cities, Incheon Metropolitan City had the biggest size of cremation furnaces, which was followed by Busan Metropolitan City, Daegu Metropolitan City, Gwangju Metropolitan City, Daejeon Metropolitan City, and Ulsan Metropolitan City in order[6].

Table 1. Status of public cremation facilities in the Metropolitan City

Sort	Installation Year (Present Position)	Cremation Furnaces (Set)	One Day Processing Capability of Corpse (Person)
Sum	-	77	262
Incheon	1977	20	72
Busan	1995	15	60
Daegu	1966	11	45
Daejeon	1976	10	28

Gwangju	2000	11	36
Ulsan	2013	10	21

3. The Actual Utilization Status of Public Cremation Facilities by citizens in the Jurisdiction Area and out of the Jurisdiction Area with the Use of e-Haneul Funeral Information System in Each Metropolitan City

3.1 Incheon Metropolitan City

During the period from 2013 to 2018, regarding the number of users(corpses) of public cremation facilities in Incheon Metropolitan City with the use of e-Haneul Funeral Information System, the citizens in the jurisdiction area were total 71,606 persons(65.0%), and the citizens out of the jurisdiction area were total 38,604 persons(35.0%). Also, the overall and the number of cremated bodies of citizens in the jurisdiction area and out of the jurisdiction area were all increasing every year.

Compared to 2013, the number of cremated bodies of citizens in the jurisdiction area of Incheon Metropolitan City using e-Haneul Funeral Information System in 2018 showed the 23.3% growth rate, which was increased by 2,534 persons by showing the growing trend every year. Also, the number of cremated bodies of citizens out of the jurisdiction area showed the 55.1% high growth rate, which was increased by 3,008 persons [7]. Thus, the growth rate of cremated bodies of citizens out of the jurisdiction area was relatively higher(31.8%).

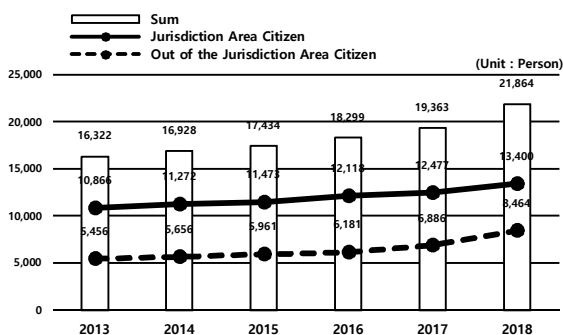


Figure 1. Status of Cremated Bodies by Region (Incheon)

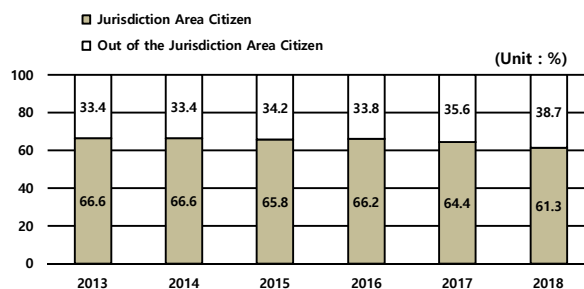


Figure 2. Utilization Distribution Rate by Region(Incheon)

3.2 Busan Metropolitan City

During the period from 2013 to 2018, regarding the number of users(corpses) of public cremation facilities in Busan Metropolitan City with the use of e-Haneul Funeral Information System, the citizens in the jurisdiction area were total 107,719 persons(91.8%), and the citizens out of the jurisdiction area were total 9,578 persons(8.2%). Also, the overall and the number of cremated bodies of citizens in the jurisdiction area were increasing every year while the number of cremated bodies of citizens out of the jurisdiction area was gradually decreasing.

Compared to 2013, the number of cremated bodies of citizens in the jurisdiction area of Busan

Metropolitan City using e-Haneul Funeral Information System in 2018 showed the 18.1% growth rate, which was increased by 3,022 persons by showing the growing trend every year. On the other hand, the number of cremated bodies of citizens out of the jurisdiction area showed the 60% high decline rate, which was decreased by 1,262 persons[8].

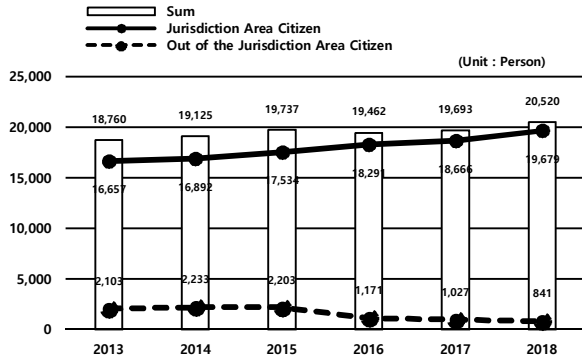


Figure 3. Status of Cremated Bodies by Region (Busan)

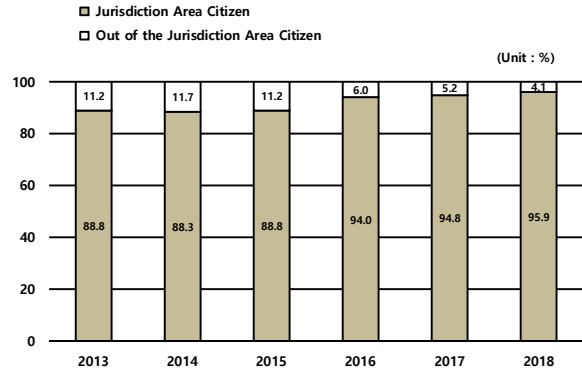


Figure 4. Utilization Distribution Rate by Region(Busan)

3.3 Daegu Metropolitan City

During the period from 2013 to 2018, regarding the number of users(corpses) of public cremation facilities in Daegu Metropolitan City with the use of e-Haneul Funeral Information System, the citizens in the jurisdiction area were total 61,973 persons(80.9%), and the citizens out of the jurisdiction area were total 14,677 persons(19.1%). Also, the overall and the number of cremated bodies of citizens in the jurisdiction area were increasing every year while the number of cremated bodies of citizens out of the jurisdiction area showed the variance in increase and decrease every year.

Compared to 2013, the number of cremated bodies of citizens in the jurisdiction area of Daegu Metropolitan City using e-Haneul Funeral Information System in 2018 showed the 23.8% growth rate, which was increased by 2,209 persons by showing the growing trend every year. On the other hand, the number of cremated bodies of citizens out of the jurisdiction area showed the 7.4% minor growth rate, which was increased by 172 persons[9]. Thus, the growth rate of cremated bodies of citizens in the jurisdiction area was relatively higher(16.4%).

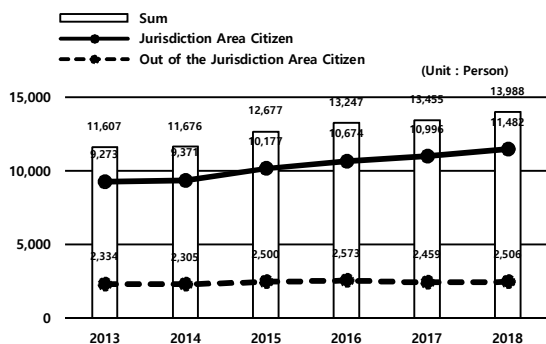


Figure 5. Status of Cremated Bodies by Region(Daegu)

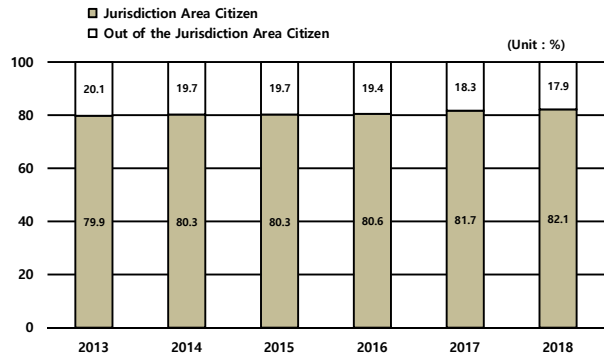


Figure 6. Utilization Distribution Rate by Region(Daegu)

3.4 Daejeon Metropolitan City

During the period from 2013 to 2018, regarding the number of users(corpses) of public cremation facilities in Daejeon Metropolitan City with the use of e-Haneul Funeral Information System, the citizens in the jurisdiction area were total 28,728 persons(71.0%), and the citizens out of the jurisdiction area were total 11,751 persons(29.0%). Also, the overall number of cremated bodies was increasing every year while the number of cremated bodies of citizens in the jurisdiction area and out of the jurisdiction area showed the variance in increase and decrease every year.

Compared to 2013, the number of cremated bodies of citizens in the jurisdiction area of Daejeon Metropolitan City using e-Haneul Funeral Information System in 2018 showed the 15.5% growth rate, which was increased by 698 persons. On the other hand, the number of cremated bodies of citizens out of the jurisdiction area showed the 4.2% minor growth rate, which was increased by 81 persons [10]. Thus, the growth rate of cremated bodies of citizens in the jurisdiction area was relatively higher(11.3%).

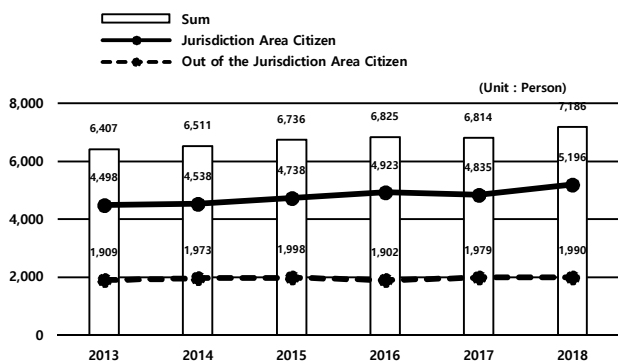


Figure 7. Status of Cremated Bodies by Region (Daejeon)

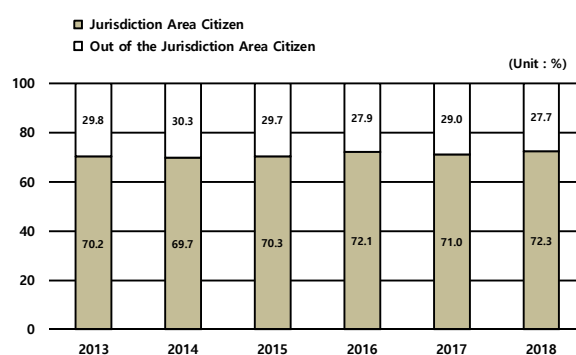


Figure 8. Utilization Distribution Rate by Region (Daejeon)

3.5 Gwangju Metropolitan City

During the period from 2013 to 2018, regarding the number of users(corpses) of public cremation facilities in Gwangju Metropolitan City with the use of e-Haneul Funeral Information System, the citizens in the jurisdiction area were total 34,510 persons(63.8%), and the citizens out of the jurisdiction area were total 19,605 persons(36.2%). Also, the number of cremated bodies of citizens in the jurisdiction area was increasing every year while the overall and the number of cremated bodies of citizens out of the jurisdiction area showed the variance in increase and decrease every year.

Compared to 2013, the number of cremated bodies of citizens in the jurisdiction area of Gwangju Metropolitan City using e-Haneul Funeral Information System in 2018 showed the 31.7% growth rate, which was increased by 1,574 persons. On the other hand, the number of cremated bodies of citizens out of the jurisdiction area showed the 1.2% decline rate, which was decreased by 41 persons[11].

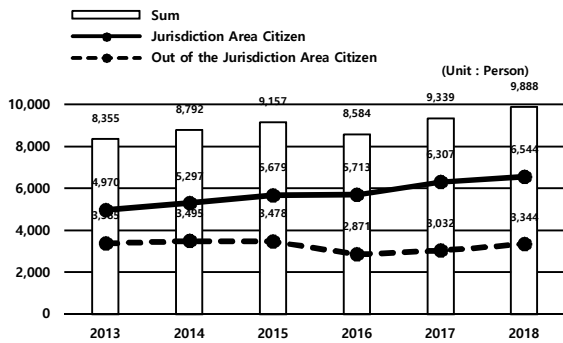


Figure 9. Status of Cremated Bodies by Region(Gwangju)

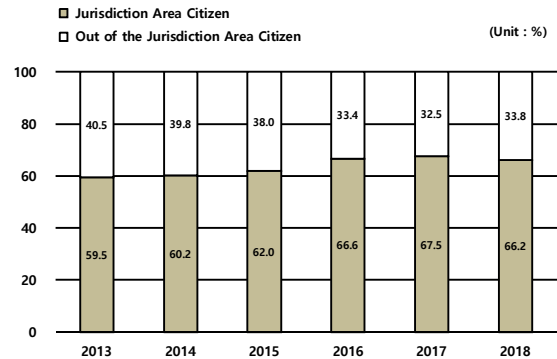


Figure 10. Utilization Distribution Rate by Region(Gwangju)

3.6 Ulsan Metropolitan City

During the period from 2013 to 2018, regarding the number of users(corpses) of public cremation facilities in Ulsan Metropolitan City with the use of e-Haneul Funeral Information System, the citizens in the jurisdiction area were total 23,964 persons(81.1%), and the citizens out of the jurisdiction area were total 5,600 persons(18.9%). Also, the overall and the number of cremated bodies of citizens in the jurisdiction area and out of the jurisdiction area were all increasing every year.

Compared to 2013, the number of cremated bodies of citizens in the jurisdiction area of Ulsan Metropolitan City using e-Haneul Funeral Information System in 2018 showed the 45.5% growth rate, which was increased by 1,464 persons by showing the growing trend every year. Also, the number of cremated bodies of citizens out of the jurisdiction area showed the 580.1% high growth rate, which was increased by 1,282 persons[12].

Thus, the citizens in the jurisdiction area and out of the jurisdiction area were all showing such high growth rates.

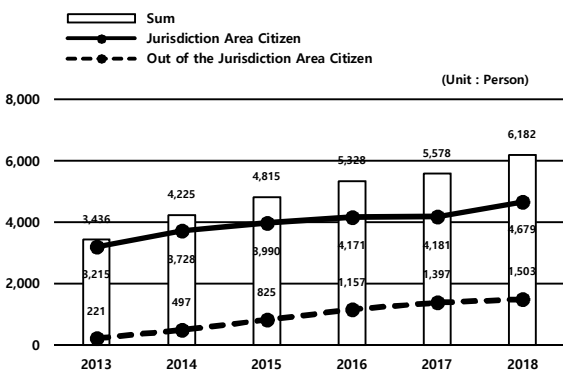


Figure 11. Status of Cremated Bodies by Region (Ulsan)

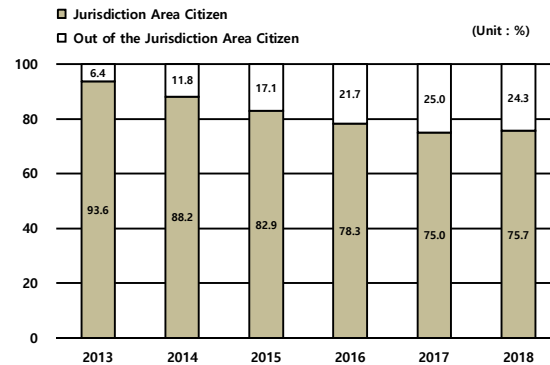


Figure 12. Utilization Distribution Rate by Region(Ulsan)

4. Comprehensive Results of Comparative Analysis in Each Metropolitan City

4.1 Utilization Rate of Citizens in the Jurisdiction Area and out of the Jurisdiction Area in Each Year

In the comprehensive results of analysis on the utilization rate of public cremation facilities by citizens in the jurisdiction area and out of the jurisdiction area in the six metropolitan cities in the whole nation with the use of e-Haneul Funeral Information System in each year, Busan Metropolitan City showed the highest utilization rate of citizens in the jurisdiction area, which was followed by Ulsan Metropolitan City, Daegu Metropolitan City, Daejeon Metropolitan City, Incheon Metropolitan City, and Gwangju Metropolitan City in order. On the other hand, Gwangju Metropolitan City showed the highest utilization rate of citizens out of the jurisdiction area, which was followed by Incheon Metropolitan City, Daejeon Metropolitan City, Daegu Metropolitan City, Ulsan Metropolitan City, and Busan Metropolitan City in order.

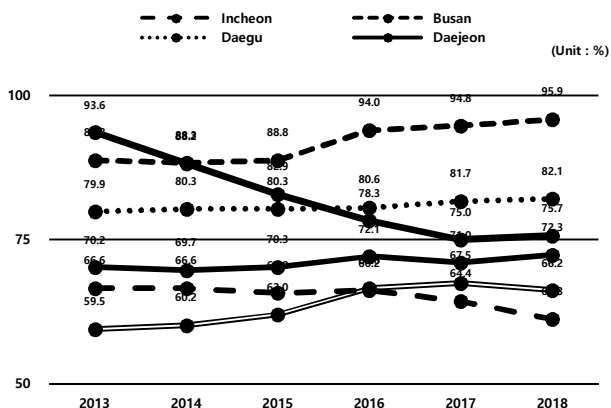


Figure 13. Utilization Rate of Citizens in the Jurisdiction Area

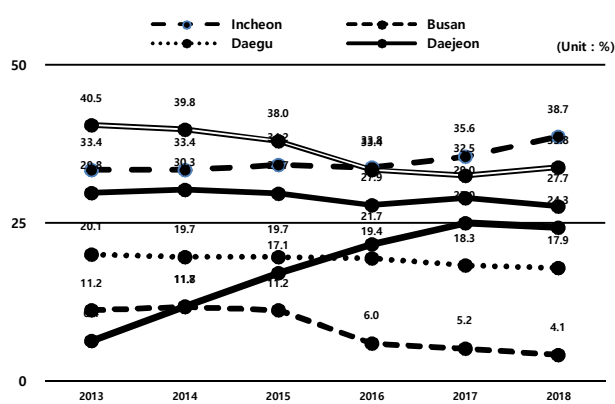


Figure 14. Utilization Rate of Citizens out of the Jurisdiction Area

4.2 Annual Average Utilization Rate of Citizens in the Jurisdiction Area and out of the Jurisdiction

In the results of analysis on the annual average utilization rate of public cremation facilities by citizens in the jurisdiction area and out of the jurisdiction area in the six metropolitan cities in the whole nation with the use of e-Haneul Funeral Information System, the overall average of utilization rate of citizens in the jurisdiction area was 75.8%. The year showing the lowest annual average utilization rate of citizens in the jurisdiction area was 2015(75.0%) while the year showing the highest rate was 2013(76.4%). Also, the overall average of utilization rate of citizens out of the jurisdiction area was 24.2%. The year showing the lowest annual average utilization rate of citizens out of the jurisdiction area was 2013(23.6%) while the year showing the highest rate was 2015(25.0%). Thus, the gaps between the lowest and the highest of annual average utilization rate of citizens in the jurisdiction area and out of the jurisdiction area were insignificant as 1.4% respectively.

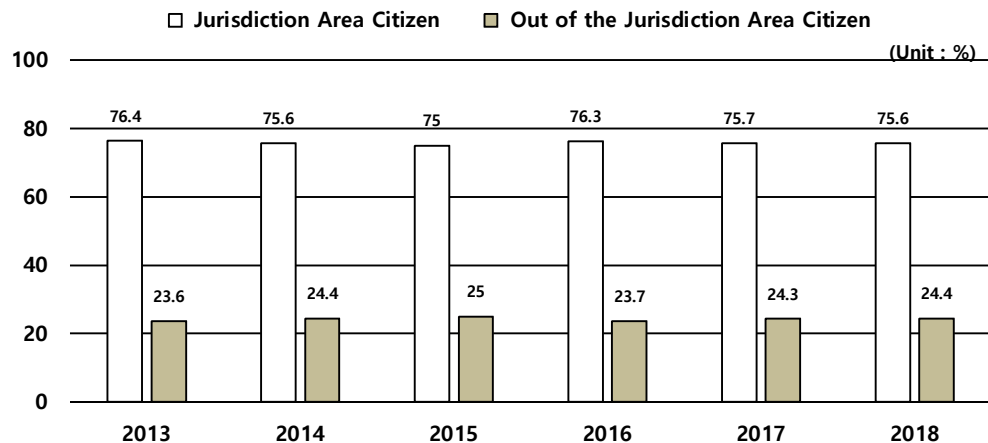


Figure 15. Annual Average Utilization Rate in Each Year

5. Conclusion

We are conducted the comparative analysis on the actual utilization state of public cremation facilities by citizens in the jurisdiction area and out of the jurisdiction area in the six metropolitan cities in the whole nation with the use of e-Haneul Funeral Information System during the period from 2013 to 2018. Based on such results of this study, the policy measures for improving the efficiency of supply & demand of public cremation facilities in the six metropolitan cities in the whole nation could be suggested as follows.

First, on the basis of 2018, among the six metropolitan cities in the whole nation, the places showing the annual average utilization rate of citizens out of the jurisdiction area less than the average(24.4%) were Busan Metropolitan City(4.1%) and Daegu Metropolitan City(17.9%). Thus, when the utilization rate of public cremation facilities by citizens out of the jurisdiction area was lower, the overall demand for cremation was high. Therefore, the supply & demand policy of public cremation facilities should be carried forward by preferentially focusing on the metropolitan cities with low utilization rate of citizens out of the jurisdiction area.

Second, the maximum variance of utilization rate of public cremation facilities between citizens in the jurisdiction area and out of the jurisdiction area in the six metropolitan cities in the whole nation was 17.9% in Ulsan Metropolitan City. On the other hand, the maximum variance of annual average utilization rate of public cremation facilities putting together the whole six metropolitan cities was 1.4%. Thus, the variance of the whole six metropolitan cities was insignificant. Therefore, for the efficiency of supply & demand policy of cremation facilities in the six metropolitan cities, the customized-policies considering the characteristics of each metropolitan city should be carried forward in priority.

Third, the population size of those six metropolitan cities in the whole nation is large city, and relatively, they are facing many difficulties in the expansion for supply & demand of cremation facilities. Therefore, for the smooth construction of cremation facilities, it would be necessary to enforce policies that could disperse the demand for cremation through the joint construction of cremation facilities with other local governments close to each metropolitan city.

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