

Analysis of the Effect of Construction of Public Cremation Facilities in Jeongeup City on Cremators Number Using E-Haneul Funeral Information System in Jeollabukdo and on Cremation Rate

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Abstract

Based on a result of we research and analysis of this study, it was analyzed that the average annual cremators number using E-Haneul Funeral Information System among the five public cremation facilities in Jeollabukdo was 9,713 in total before the opening of public creation facilities in Jeongeup City (2013-2015), while the number was 12,159 after the opening of public cremation facilities in Jeongeup City (2016-2019); the number was increased by 2,446, compared to the opening period (2013-2015), with a large increase rate of 25.2%. In addition, the average annual cremation rate before the opening of public cremation facilities in Jeongeup City (from 2013 to 2015) was 71.6%, but the average annual cremation rate during the period after the opening (from 2016 to 2019) was 81.5%, which was a large increase rate of 9.9% compared to period before the opening of the facilities. Based on research results above, we have presented policy suggestions in order to increase the efficiency of operation and management of public cremation facilities by local governments as follows. First, in order to prepare for the increase in demand for cremation due to the increase in cremators number, a policy promotion for the expansion of “public cremation facilities” should be carried out as soon as possible, focusing on local governments whose supply has reached the limit. Second, in order to support the expansion and construction of public cremation facilities, the government subsidy rate and government subsidy at the level of current 70%, provided by the central government, should be further expanded. Third, overcoming the NIMBY conflict over location for public cremation facilities, the utilization rate should be enhanced, through the joint construction and facility operation of the public cremation facilities between local governments, and the efficiency of the project implementation should be improved through the joint sharing of the facility operation cost.

Keywords: *Public Cremation Facilities, E-Haneul Funeral Information System, Corpse, Deaths Number*

1. Introduction

In the face of the increase of the cremation rate throughout the whole nation and the entry into the super-aged society in 2025 [1], the number of users for public cremation facilities using the E-Haneul Funeral

Information System has been increasing steadily due to the increase in deaths number caused by the increase in the aging population [2]. In this study, the E-Haneul Funeral Information System refers to an online cremation reservation system established by the Ministry of Health and Welfare to operate all cremation facilities nationwide as a unified reservation system [3].

The public cremation facilities in Jeongeup City, Jeollabukdo, opened on November 12, 2015, went through a pilot operation process from November 13, and have been operating in earnest since 2016. Therefore, in this study we have selected as our study subjects cremators number and cremation rate in using the E-Haneul Funeral Information System for the corpse among the three cremators types (corpse, opened ashes, and dead fetus), in five public cremation facilities in Jeollabukdo, including the four facilities existing in Jeonju City, Iksan City, Namwon City, and Gunsan City and one facility recently established in Jeongeup City.

In this study, we selected the period of 2013 to 2019 as our research scope, and compared it before and after 2016, when a newly established public cremation facility in Jeongeup City in Jeollabukdo, began to operate in earnest. We investigated and analyzed the effect of the construction of a public cremation facility in Jeongeup City on the cremators number and cremation rate in using the E-Haneul Funeral Information System among public cremation facilities in Jeollabukdo. The purpose of this study is to make policy suggestions to improve the efficiency of funeral policies for the establishment of public cremation facilities.

2. Status of public cremation facilities in Jeollabukdo

As shown in Table 1, according to the operation status of public cremation facilities in Jeollabukdo as of December 31, 2020, there are a total of five public cremation facilities and a total of 26 sets of cremation furnaces. The scale numbers of the creation furnaces by the basic local governments in Jeollabukdo are six sets, the largest ones in Jeonju City, followed by five sets in Iksan City, Gunsan City, and Jeongeup City, and three sets in Namwon City.

Table 1. Status of public cremation facilities in Jeollabukdo(As of December 2020)

Sort	Sum	Jeonju City	Iksan City	Namwon City	Gunsan City	Jeongeup City
crematorium(Locations)	5	1	1	1	1	1
Cremation Furnaces(Set)	26	6	5	3	5	5
Initial Installation Year	-	1977	1980	1983	1997	2015.11

In addition, for the public cremation facilities in Jeollabukdo, Jeonju City built the first one in 1977, followed by Iksan City in 1980, Namwon City in 1983, Gunsan City in 1997, and Jeongeup City in 2015, the most recent one [4].

3. Status of Deaths Number in Jeollabukdo

As shown in Figure 1, the deaths number in Jeollabukdo during the period from 2013 to 2019 shows a continuous increasing trend every year from 13,492 in 2013 to 14,519 in 2019, and the annual average deaths number was analyzed to be 14,022 [5].

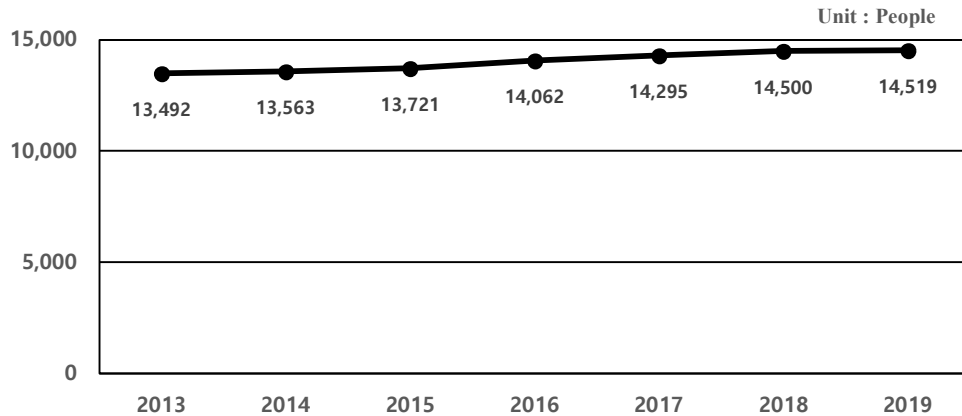


Figure 1. Progress of deaths number by year in Jeollabukdo

During the period from 2013 to 2019, the increase and decrease rate of deaths number of the whole nation and Jeollabukdo are shown in Figure 2 [5]. Also, in the increase and decrease rate of deaths number, the rate of whole nation increased by 1.4% on an annual average, while the rate of Jeollabukdo increased by 0.8%. Therefore, it was analyzed that the increase rate of deaths number of Jeollabukdo was relatively 0.6% lower on average per year, compared to the increase rate in the whole nation.

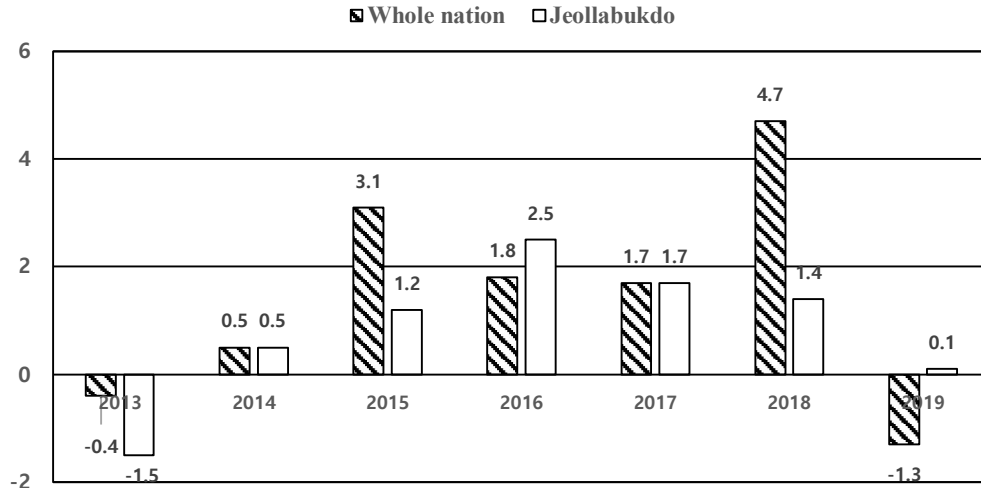


Figure 2. Increase and decrease rate of the deaths number by year in Jeollabukdo

4. Progress of the cremators number in Jeollabukdo

As shown in Figure 3, cremators number using E-Haneul Funeral Information System in the Jeollabukdo during the period of 2013 to 2019, is showing a continuous increase every year from 9,314 persons in 2013 to 12,404 persons in 2019 [5]. In addition, the average annual cremators number was analyzed to be 10,855.

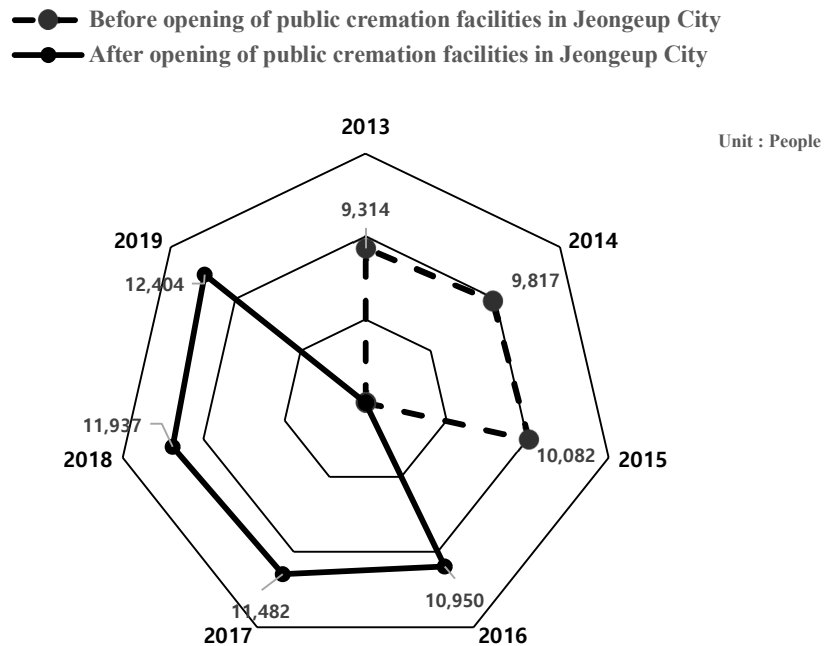


Figure 3. Progress of the cremators number by year in Jeollabukdo

Before the opening of public cremation facilities in Jeongeup City(2013~2015), the annual average cremators number in the Jeollabukdo was 9,738 but, after the opening of the facilities in the City (2016~2019) the annual average cremators number in the Jeollabukdo was 9,738. Therefore, compared to the pre-open period (2013-2015), it was analyzed that the annual average of cremators number increased by 1,955 to show a significant increase rate of 20.1%. In addition, it was analyzed that the annual average cremators number in the Jeollabukdo increased by 4.2% before the opening of public cremation facilities in Jeongeup City (2013~2015). But, the annual cremators number in the Jeollabukdo increased by 5.4%, after the opening of the facilities in the City (2016~2019).

Based on research results above, it was analyzed that the construction of public cremation facilities has a great influence on the increase in cremators number using the E-Haneul Funeral Information System.

5. Progress of Cremation Rate in Jeollabukdo

As shown in Figure 4, the annual average cremation rate in the Jeollabukdo was 71.6% before the opening of public cremation facilities in Jeongeup City(2013~2015). But, the rate was 81.5% after the opening of the facilities in Jeongeup City(2013~2015), showing that the annual average cremation rate increased by 9.9%, a significant increase rate. In addition, the cremation rate in the Jeollabukdo in 2015, the year just before the opening of public cremation facilities in Jeongeup City, was 73.5%, while the cremation rate in the whole nation was 80.8%. Therefore, the cremation rate in the Jeollabukdo was 7.3% lower than the cremation rate in the whole nation, showing a large difference. On the other hand, the cremation rate in the Jeollabukdo was 85.4% in 2019, after the opening of the public cremation facility in Jeongeup City, which was 2.6% lower than cremation rate in the whole nation of 88.0% in 2019, showing a slight difference.

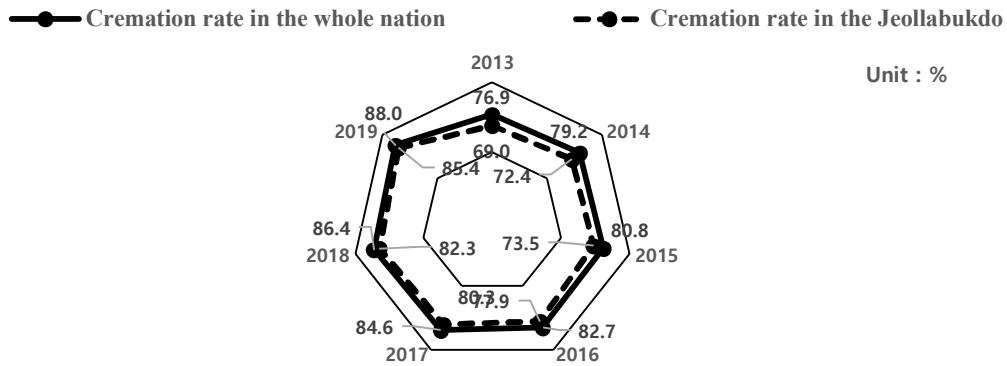


Figure 4. Progress of cremation rate by year in Jeollabukdo

Based on the research results above, it was analyzed that the construction of public cremation facilities causes the increase in the cremators number using the E-Haneul Funeral Information System, and thus has a positive effect on the increase in cremation rates.

6. Progress of the Cremators Number by Public Cremation Facilities in Jeollabukdo

As shown in Figure 5, the total number of cremators using the E-Haneul Funeral Information System by public cremation facilities in Jeollabukdo was 77,776 during the period from 2013 to 2019. In addition, the cremators number by public cremation facilities was shown to be the highest in Jeonju City with 32,034 accounting for 41.2% of the total, followed by Gunsan City with 14,475 people (18.6%), Iksan City with 14,404 people (18.5%), and Jeongeup City with 11,387 people (14.7%), and followed by Namwon City with 5,476 (7.0%) [6- 10].

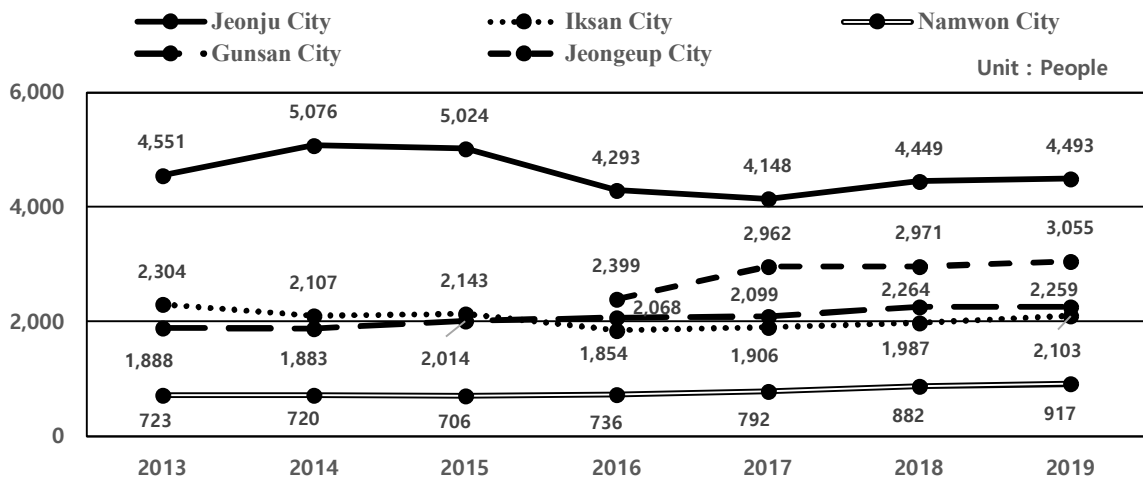


Figure 5. Progress of the cremators number by public cremation facilities in Jeollabukdo

The annual average cremators number using the E-Haneul Funeral Information System by public cremation facilities in Jeollabukdo was shown from 9,713 before the opening of public cremation facilities in Jeongeup City (2013-2015) to 12,159 after the opening the facilities (2016-2019). Therefore, it was analyzed that cremators number increased by 2,446 compared to the opening period (2013-2015), showing a significant

increase rate of 25.2%.

According to the research results above, it was analyzed that the construction of public cremation facilities causes an increase in demand for public cremation facilities using the E-Haneul Funeral Information System, and thus has a great influence on the increase in cremators number.

7. Comprehensive Analysis Results

7.1 Comparative Analysis of Deaths Number and Cremators Number Using the E-Haneul Funeral Information System for the Public Cremation Facilities

As shown in Figure 6, based on the result of a comparative analysis of the deaths number in Jeollabukdo and the cremators number in public cremation facilities using the E-Haneul Funeral Information System, the annual average increase rate of deaths number from 2013 to 2019 was 0.8%, while the annual average increase rate of the Cremators number using the E-Haneul Funeral Information System was found to be 4.9%. Therefore, it was analyzed that the annual average increase rate of the cremator number using the E-Haneul Funeral Information System increased more than 6.1 times compared to the increase rate of the of deaths number.

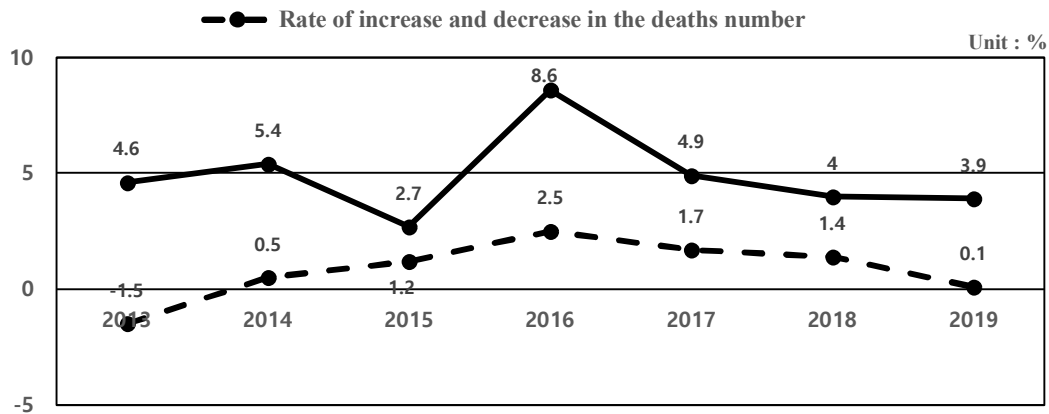


Figure 6. The rate of increase and decrease in the deaths number and cremators number by year in Jeollabukdo

According to the above research results, the cremators number using the online cremation reservation service of the E-Haneul Funeral Information System has been increasing every year across the country [11]. It is analyzed that the demand for cremation using public cremation facilities using the E-Haneul Funeral Information System in Jeollabukdo is also increasing significantly.

7.2 Comparative Analysis of Cremation Increase Rate in the Whole Nation and in the Jeollabukdo

As shown in Figure 7, during the period from 2013 to 2019, the cremation increase rate of the whole and the cremation increase rate of the E-Haneul Funeral Information System nation in Jeollabukdo show a continuous increase every year. In 2015 (just before the opening of public cremation facilities in Jeongeup City), the cremation increase rate in Jeollabukdo was 1.1%, while in 2016(after the opening of public cremation facilities in Jeongeup City), the cremation increase rate in Jeollabukdo was 4.4%, indicating a significant increase. In addition, it was analyzed that the average annual cremation increase rate in Jeollabukdo ater the opening of public cremation facilities in Jeongeup City was 3.0%, showing a large increase rate

compared to 1.8%, annual average cremation rate in the whole nation.

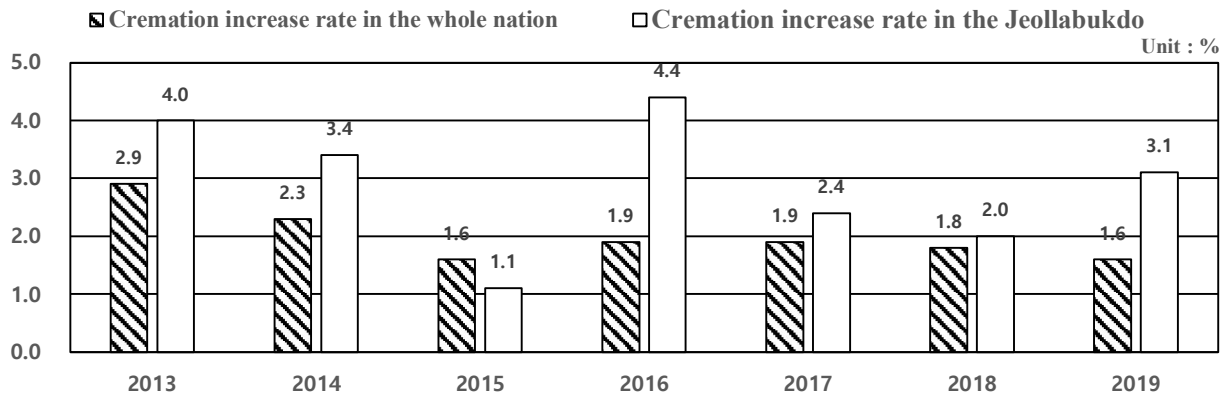


Figure 7. Progress of cremation increase rate by year in the whole nation and Jeollabukdo

As a result of the above research, it was analyzed that the construction of public cremation facilities has a great influence on the increase of cremation rate, using the E-Haneul Funeral Information System for public cremation facilities.

7.3 Comparative Analysis of Cremation Numbers Using the E-Haneul Funeral Information System or Public Cremation Facilities

The cremators number using the E-Haneul Funeral Information System for each public cremation facilities in Jeollabukdo was found to have decreased by 14.6%, from 5,024 in 2015 (before the opening of public cremation facilities in Jeongeup City) to 4,293 in 2016(after the opening of public cremation facilities in Jeongeup City). In addition, the number of public cremation facilities in Iksan City decreased by 13.5%, from 2,143 people in 2015 (before opening of public cremation facilities in Jeongeup City) to 1,854 in 2016 (after opening of public cremation facilities in Jeongeup City). On the other hand, in the case of public cremation facilities in Namwon City and Gunsan City, the cremators number using the E-Haneul Funeral Information System continues to increase even after the opening of public cremation facilities in Jeongeup City, compared to the period, before opening the public cremation facilities in Jeongeup City.

According to the research results above, as it was found that the demand for cremation was partially reduced or not affected by the construction of nearby public cremation facilities, it was analyzed that the effect of the new construction of public cremation facilities on the demand for cremation showed differences by public cremation facilities.

8. Conclusion

Based on the results of the survey and analysis of this study, we want to present policy suggestions to enhance the efficiency of operation and management of public cremation facilities as follows: First, during the period from 2013 to 2019, the average annual increase rate of the cremators number using the E-Haneul Funeral Information System in Jeollabukdo increased significantly by 4.9%. Since there are only 6 public cremation facilities in preparation for such an increase in cremation demand, policy implementation must be carried out as soon as possible, for the expansion of public cremation facilities in Seoul metropolitan areas where supply has reached its limit and local governments in cities with high demand for cremation. Second, the average annual cremation increase rate in Jeollabukdo, after the opening of public cremation facilities in Jeongeup City, was 3.0%, which

is a significant increase compared to annual average cremation increase rate of 1.8% in the whole nation. As the construction of public cremation facilities has a positive effect on the increase of the cremation rate, the central government should expand subsidy rate and subsidy support, which is currently at 70% level, in order to support the expansion and construction of public cremation facilities. Third, due to the recognition that public cremation facility in Jeongeup City is a NIMBY facility, there was a conflict over the location between local residents and local governments nearby, however, it can be seen as a good example of policy implementation that four local governments of Jeongeup City, Gimje City, Buan-gun and Gochang-gun resolved a conflict and succeeded in constructing public cremation facilities. Therefore, in order to settle the conflict over location of public cremation facilities and to improve the utilization rate of public cremation facilities between local governments, following the joint operation of the facilities after construction, the policies to establish public cremation facilities, through a cooperation with nearby local governments, should be actively carried out.

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