

Analysis of the results of Participatory Surveys for Public Deliberation on Shin-Gori Nuclear Reactors No. 5 & 6

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1. Introduction

As Korea exported four of its own APR 1400s to the UAE, positive thoughts on nuclear power were caught on to nationwide. However, an earthquake hit Fukushima in Japan in 2011 and triggered a huge accident called the nuclear power plant explosion. Nuclear power has become one of the major social conflicts in our society as many people spread the fear that what will happen if a similar accident occurs in our country. In addition, due to two earthquakes near the nuclear power plant in Korea, anxiety about accidents has increased. To make matters worse, various unfavorable events related to nuclear power industry like quality scandal have occurred. In the 19th presidential election, however, most of the presidential candidates became interested in making a pledge to implement de-nuclear power plant policy and to stop the construction of Shin-gori 5 and 6.

Since President Moon Jae-in elected, the new government has tried to implement a nuclear power plant policy pledge: 'Stop the new nuclear power plant and prepare a roadmap for nuclear power to go to zero nuclear power plants in 40 years. However, public opinion seems to be in a tight race based on energy efficiency, cost, stability and efficiency. The government immediately shut down the nuclear power plant that has reached its end of life and scrapped the plan to build new nuclear power plants including Shin-gori 5 and 6.

If the construction of Shin-gori 5 and 6, which had already been completed at more 33 % of construction, was made blank, considerable social conflicts were foreseen. So government announced that it would decide whether to build or stop them based on public opinion. In other words, government did not refer to the opinions of the citizens, but rather said government would follow the results of the public opinion. Major national policy decisions have been generalized and carried out by a handful of elite politicians or specialty bureaucrats. Decision-making by deliberative democracy has made a significant shift to our society.

2. Research Purpose

The growing interest in policy decisions through public opinion surveys after the survey on the public deliberation of the Shin-gori 5 and 6 was a highly desirable phenomenon. However, it would be problematic to understand and implement certain policies as a means to finally decide whether to approve or oppose them through the public survey. Public

deliberation does not differ greatly from existing opinion polls when the results of public opinion polls are checked without the clear understanding of the process by which various members of the survey receive information on issues, exchange opinions, and understand each other's positions. Finding a trade-off by focusing on the opinions exchanged by both sides during the public deliberation and implementing policies accordingly can reduce the controversy that arises from focusing only on the results of the participation survey.

In this regard, this study believes that understanding the change in policy support level during the course of the public opinion survey during the three-day general debate will contribute to the accurate understanding of public opinion survey. In particular, considering that education support, age, and the presence of nuclear power plants, gender, income, Political orientation are greatly influenced by policy support, this study aims to analyze the changes that these characteristics of participants have on policy support.

3. Research

3.1 Hypothesis

The purpose of this study is to examine how each independent variable change in the 3rd and 4th surveys. The hypotheses to be revealed through this study are as follows.

1. Younger people would choose to resume the construction of shin-gori 5 and 6, the more they value the independent variables.
2. Those who have been educated below university would choose to resume the construction of shin-gori 5 and 6 without considering the independent variables more importantly than those who have graduated university and above.
3. Men would opt for more resuming the construction of Shin-gori 5 and 6 without considering the independent variables more importantly than women.
4. People with higher incomes would choose to discontinue the construction of Shin-gori 5 and 6 because they value the independent variables.
5. Progressives rather than conservatives would choose to discontinue the construction of Shin-gori 5 and 6 more because they value independent variables.
6. People living in areas where nuclear power plants are located would choose to resume the construction of shin-gori 5 and 6 without considering the independent variable as important.

4. Results and Discussion

Six independent variables and five moderating variables were analyzed to check the impact of the public discussion meeting on the decision to resume the construction of Shin-gori 5 and 6. Among them, two independent variables, namely Electricity rates and Effects on regional and national industry, were out of significance almost everywhere when choosing to resume the construction of Shin-Gori 5 and 6.

This means that the choice of importance is not very different between the resuming the construction and discontinuing the construction. Effects on regional and national industry changed from the 3rd and 4th surveys to the significance level in the Paired T-Test. Both sides, those who were for construction and against construction considered important but seemed to be unable to use either side.

In the cases of Costs to supply electricity and Stability of energy supply, the less they thought the independent variable was important compared with those who chose to discontinue the construction, no matter what the moderating variables entered. On the contrary, those who consider safety and environment to be insignificant have chosen relatively much more for resuming the construction. There was no significant change in the 3rd and 4th surveys when interacting with the moderating and independent variables, but there were some differences in the choices of older and younger people. Young people tend to choose to resume the construction as the independent variables are less important.

This could be said that people less than the age of 60 who generally chose the resuming the construction thought IV was important and decided. And those with under-college education came out in a similar way overall, although the public deliberation results were slightly different in the third and fourth survey. The less important the independent variables are in middle school and high school, the more they tend to choose to resume the construction. Men were more likely to choose the to resume the construction than women to value independent variables. The higher the income, the more important the independent variable. Therefore, the higher the income, the more likely to choose to discontinue the construction.

But the results came out as having nothing to do with income. In other words, income does not seem to have any impact. The survey found that people with progressive political ideologies chose less to resume the construction when they considered independent variables less important than conservatives. In other words, it appears that the more important the independent variables are, the more likely they chose the resuming the construction. Finally, it was expected that people who lived close to the area where the nuclear power plant was located would choose to resume the construction, thinking that the independent variables were much less important than those without the nuclear power plant. But the results did not matter at all.

5. Conclusions

The purpose of this study is to analyze the influence of independent and control variables on decision making of participants during the public opinion survey. To analyze this, the importance of the independent variables (Safety, Stability of energy supply, Costs to supply electricity, Effects on regional and national industry, Electricity rates, Environment) was analyzed by age, education, gender, presence of NPP, income and political ideology as moderating variables. For the analysis, the citizen participation survey was utilized for public deliberation of Shin-Gori 5 and 6 in 2017.

The only significant changes in the 3rd and 4th surveys of the independent variables actually changed the Effects on regional and national industry, and the rest did not change much. However, the decision to resume the construction of the Shin-gori 5 and 6 has changed as those who have selected have not decided yet have turned into those who resume the construction. About 130 people have yet to decide before taking part in the public deliberation, but after three days, the decision was made except for about 13 people. This study intended to find out what influenced their decisions and what made the choice. The results are as follows.

First, the electricity rates and the Effects on regional and national industry did not differ significantly in favor of or against the resumption of the construction of Shin-gori 5 and 6. In other words, these two independent variables, whether they are important or not, did not significantly affect the decision. However, the Effects on regional and national industry make it easier to understand what those who are in favor of the resumption of the construction of Shin-gori 5 and 6 are important, it is questionable why those opposed to construction thought this important. This is probably because people who have not yet decided on the tertiary survey changed the Effects on regional and national industry to be relatively important and to favor.

Second, the independent variables Stability of energy supply and Costs to supply electricity influenced the choice to resume construction. The lower the importance, the less they chose to resume construction. This decision seems to have been made because it recognizes that generating electricity at nuclear power plants is important for maintaining a stable supply of electricity and keeping costs low. Conversely, the less important the safety variables and the environment, the more they chose to resume the construction than those who chose to discontinue the construction. This seems to be because those who opposed the construction of the Shin-gori 5 and 6 made the decision on the importance of safety and environment.

REFERENCES

- [1] SWE OO KHIN (2019), "An Analysis of Policy Acceptance through the Public Deliberation", Kyung Hee University, p 5-10

- [2] Jang, Euchan (2019), "A Critical Assessment of 'Participatory Surveys for Public Deliberation on Shin-Gori Nuclear Reactors No. 5 & 6'", Seoul University, p 10-23
- [3] SONG, IN-JAE(2019), "A Study on Public Deliberation in Energy Policy & Deliberative Democracy", Sungkonghoe University, p 15-19
- [4] Kwon Young Sun(2018), "A Study on Deliberation in Deliberative Polling", Sogang University
- [5] The Public Deliberation Committee on Shin-Gori Nuclear Reactors No. 5 & 6 (2017), "Results of Participatory Surveys for Public Deliberation on Shin-Gori Nuclear Reactors No. 5 & 6", p 1-169