Awareness of nuclear safety according to the recognition of nuclear safety regulations policy

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1. Introduction

The importance of the government's evaluation of safety regulation policies and activities is also increasing as public interest in nuclear safety is gradually increasing. Therefore, specialized institutions for nuclear safety regulation develop systematic evaluation indicators for various nuclear and radiation safety-related policies and activities, objectively measuring and analyzing performance.

Nuclear safety regulation policy sentiment is an index to understand people's policy satisfaction by measuring the public's expectations for the government's nuclear safety regulation policy activities and the level of experience in the actual implementation of the policy. Introduced in 2019, the level of expectations and actual satisfaction for the nuclear safety regulation policy were quantified and identified, and surveys and indicators were improved every year to improve the objectivity and rationality of the indicators.

Past studies have shown that knowledge can function to determine preferences and attitudes [1] and that the improvement of the level of understanding of policies through the provision of knowledge and information will change preferences and attitudes toward policies [2]. In the process of surveying the policy sentiment of nuclear safety regulation, survey respondents encounter explanatory data on the nuclear safety regulation policy. After explaining the policy, respondents respond to how satisfied they are with the policy and whether it is necessary. Through the survey process, respondents can naturally recognize nuclear safety policies. Accordingly, this study analyzed changes in nuclear safety perception before and after policy perception.

2. Methods and Results

2.1 Survey overview and design

In order to measure the policy sentiment felt by the people, the survey design was conducted as shown in Table 1. The survey was entrusted to Hanyang University.

Table I: Survey overview

Classification	Investigation Method	Number of samples
General People	Face to face	313
Local Resident	Face to face	712
Regional Council	Online	70
Expert	Online	204
Total		1,299

The survey was organized to respond sequentially from Part A to D as shown in the following figure 1. As the questionnaire was conducted sequentially, the explanation of nuclear safety policies and policies was naturally learned. When asking Part B policy activity evaluation questions, the respondents were organized to respond to the questionnaire after presenting an explanation of each policy activity for each nuclear safety policy activity. Policy activities were presented using infographics to make it easier for the general public to understand based on the Nuclear Safety Comprehensive Plan and the Nuclear Safety Commission's work plan [3,4]. Questions confirming the safety awareness of 2024 nuclear power generation were placed in Part A, the front end of the survey, and the change in nuclear safety awareness before and after learning was measured during the survey.

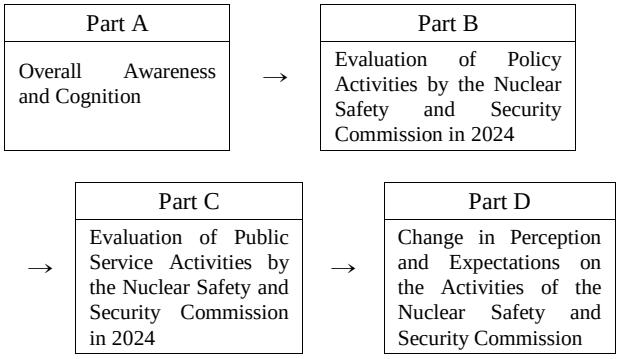

Fig. 1. Organize the questionnaire

Table II: Overview of change in safety perception[5]

Classification	A	D	Increase/ decrease p	A	D	Increase/ decrease p	A	D	Increase/ decrease p	A	D	Increase/ decrease p
	General Public(%)			Local Resident(%)			Regional Council(%)			Expert(%)		
I don't think it's safe at all	1.6	1.0	△0.6	2.9	2.2	△0.7	2.9	2.9	-	1.0	0.5	△0.5
I don't think it's safe	11.5	7.0	△4.5	12.4	7.6	△4.8	15.1	12.9	△2.8	1.0	1.%	-
I think it's a little unsafe	17.3	11.8	△5.5	19.4	13.1	△6.3	10.0	10.0	-	3.9	4.%	+1
I think it's a little safe	33.2	38.3	+5.1	34.6	41.0	+6.4	14.3	11.4	△2.9	10.8	14.%	+3.9
I think it's safe	32.6	36.4	+3.8	26.3	29.9	+3.6	35.7	40.0	+4.3	50.0	54.%	+4.9
I think it's very safe	3.8	5.4	+1.6	4.5	6.2	+1.7	21.4	22.9	+1.5	33.3	24.%	△9.3
Average score	59.04	63.71	+4.67	56.46	61.46	+5.00	65.71	68.29	+2.58	81.57	78.92	△2.65
Number of responses	313			712			70			204		

2.2 Change in perception of safety perception

The same questions were placed at the beginning and end of the survey to compare and analyze how respondents felt about the safety of nuclear power plants before and after policy learning by the Nuclear Safety and Security Commission. Questions were investigated on a six-step scale from 'not safe at all' to 'very safe'.

As a result, the rest of the group, except for the expert group, has strengthened their awareness of the safety of nuclear power plants more positively than in the beginning after encountering the 2024 policy activities of the Nuclear Safety and Security Commission during the policy sentiment survey.

The general public rose 4.67 points from 59.04 points to 63.71 points, local residents rose 5.00 points from 56.46 points to 61.46, and the council rose 2.58 points from 65.71 points to 68.29 points. In contrast, the expert group fell 2.65 points from 81.57 to 78.92.

In the survey of the general public and local residents, 'not safe at all' as the ratio of 'somewhat unsafe' decreased, the responses of 'somewhat safe' (+5.1p) and 'safe' (+3.8) increased significantly. In the case of the original plan consultation, the response rate of 'safe' increased significantly (+4.3p) as the response rates of 'unsafe' and 'slightly safe' decreased slightly. This can be interpreted as the policy activities giving a positive message about the safety of nuclear power plants.

On the other hand, in the case of the expert group, the nuclear power plant safety awareness score fell after encountering policy activities, which occurred as the 'very safe' response rate decreased (△9.3p), and the response that was extremely biased in the initial question(A) seems to have been corrected to some extent during the investigation process. Nevertheless, the positive perception of the safety of nuclear power plants was evaluated stably.

3. Conclusions

After encountering the 2024 policy activities of the Nuclear Safety and Security Commission during the policy sentiment survey, it was found that the awareness of the safety of nuclear power plants has been more positively strengthened than in the beginning. It is interpreted that learning about policy activities gave a positive message about the safety of nuclear power plants. Therefore, in order to improve policy satisfaction, efforts to more actively deliver policy information that meets the needs of the people seem to be necessary. In addition, experts already have a lot of information on safety regulation policies, so there is a limit to evaluating the improvement of awareness due to learning, but they have a higher safety awareness than other groups, so a different approach is needed from the general public.

REFERENCES

[1] K. Eriksen, et al, Tax knowledge an attitudes towards taxation: A report on a quasi-experiment, Journal of Economic Psychology, Vol. 17(3), p.387, 1996.
[2] D. O. Im, et al, The Effects of Policy Understanding on the Perception of Policy Performance by the General Public, The Korean Association for Governance, Vol. 19(2), p.2, 2012.
[3] Nuclear Safety and Security Commission, The 3rd Comprehensive Plan for Nuclear Safety, 2021.
[4] Nuclear Safety and Security Commission, NSSC Work Plan 2024, 2024.
[5] Research and Survey on the Policy Perception Index of the Nuclear Safety Regulation Policies 2024 in Korea, Hanyang University, 2024.