

## Nuclear Power Perception by Leadership Groups on Nuclear Power Policy in Korea

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### 1. Introduction

The lack of understanding and agreement between the public and policy makers concerning nuclear power often causes conflicts between the two groups, which has undesirable effects on the establishment of an energy policy which considers public opinion. Civilization is especially sensitive to certain issues regarding nuclear power, such as radioactive waste, the safety of nuclear power facilities, and nuclear weapon proliferation. At present, there are various social conflicts surrounding nuclear power. Although numerous investigations into the public's perception of nuclear power have been conducted, minimal efforts have been made to investigate the perception of nuclear power by social leadership groups, who are at the center of policy making. Therefore, this paper analyzes patterns in the perception of nuclear power by leadership groups in Korea in order to establish the necessary foundation for the direction of efficient communication policies.

### 2. Methods and Results

To establish a foundation for the direction of communication policies concerning nuclear power, this study analyzes the patterns in leadership groups' perception of nuclear power through quantitative and qualitative investigations involving five steps: (1) analysis of existing literature; (2) surveys and interview questions; (3) expert consultation; (4) in-depth interviews with leadership groups and conducted surveys; and (5) external evaluation. The survey questionnaire is the main research instrument for this study. The questions were selected by considering both social cognitive theory and communication theory, as well as by examining existing literature, discussions, and expert consultation. The questions aimed to first identify the differences in the fundamental perception of nuclear power by examining the interviewee's perception of nuclear power, understanding the public perception, and by evaluation of the contribution of nuclear power to energy supply in Korea. Additionally, the focus of this study is based on the social learning theory proposed by Bandura (1991). Based on the theoretical definition of leadership groups, the research participants were selected as 69 academicians (professors, scientists, and technological experts) (25.5%), 50 industrial associates (entrepreneurs) (18.5%), 34 politicians (elected civil servants) (12.5%), 34 high-ranking civil servants (appointed civil servants) (12.5%), 35 religious leaders (12.9%), 34 non-governmental

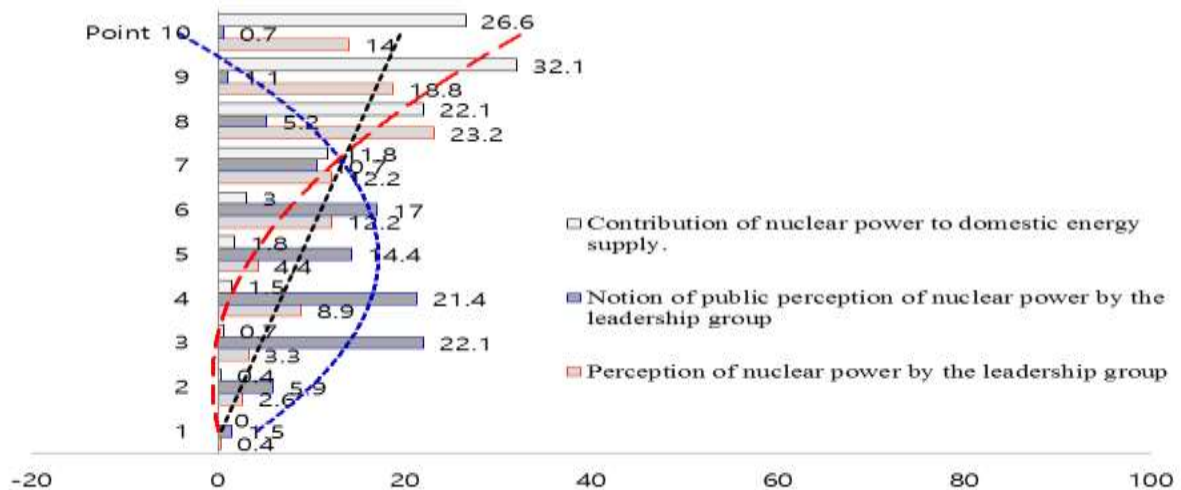
organization leaders (12.5%), and 15 journalists (5.5%). In terms of gender, there were 216 male participants (80.9%) and 51 female participants (19.1%), and in terms of age, there were 125 participants in their 50s (46.3%), 54 participants in their 40s (20.0%), 50 participants in their 60s (18.5%), 18 participants in their 70s (6.7%), 12 participants in their 30s (4.4%), and 11 participants in their 80s (4.1%). SPSS/WIN 15.0 was used to analyze the data in terms of frequency and percentage, mean and standard deviation, and one-way ANOVA. The Scheffé's method was used for post-test verification.

#### 2.1 Patterns in Nuclear Power Perception of Leadership Groups

Korean leadership groups tend to highly evaluate the contribution of nuclear power to energy supply in Korea, with the most frequent score being 9 points (out of 10), and the score for the public perception of nuclear power being 8 points. On the other hand, they tend to evaluate the public notion of the public perception of nuclear power to be relatively low, with the most frequent score being 3 points (Fig 1). Non-governmental organization leaders, positively evaluated the contribution of nuclear power (9.03 points) and perception of nuclear power (8.38 points), and negatively evaluated the notion of public perception of nuclear power (4.65 points). In addition, religious leaders have the lowest evaluation with regards to the contributions of nuclear power (7.46 points) and the most negative perception of nuclear power (5.66 points). Non-governmental organization leaders, show a difference of 3.73 points between their perception of nuclear power and the notion of public perception, where religious leaders show a difference of -0.45 points (Fig 2).

#### 2.2 Causes of Public Fear of Nuclear Power, Priority Factors to be Considered for Nuclear Policy

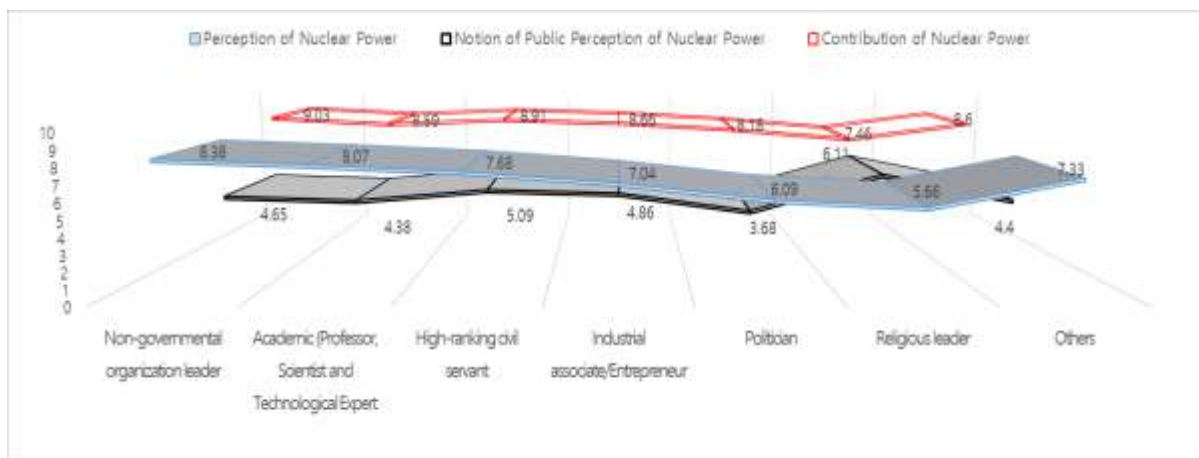
Mistrust of the government (16%) was the most frequent cause of public fear of nuclear power, followed by the lack of communication and public relations by experts (14%), unsafe nuclear power plant facilities (14%), anti-nuclear organizations (12%), lack of provision of information by the press and media (11%), negative attitude of individuals (9%), and corruption by relevant organizations and institutions (0.9%). The most important considerations for domestic nuclear power policy appeared to be gaining social acceptance and national consensus, followed by energy security and economic development.



\* Scores are based on a 10-point scale, with higher scores representing higher evaluation. Trends were observed on a percentage scale.

\* High scores are frequent in the evaluation of contribution of nuclear power to domestic energy supply and the perception of nuclear power by leadership groups, while lower scores are frequent in the notion of public perception of nuclear power. Public communication encourages understanding and trust as well as participation in policy-making through two-way symmetric communication process, wherein all tasks pertinent to the operation of the nation are understood by the public and conversely, the opinions and demands of the public are reflected in the decisions granted by the government administration. However, differences in perception and a fundamental lack of understanding of communication, hinder public communication concerns regarding nuclear power.

**Fig. 1. Pattern in Nuclear Power Perception of Leadership Groups**



\*There are clear differences in the perception of nuclear power, the notion of public perception of nuclear power, and the contribution of nuclear power to domestic energy supply in all respects. Non-governmental organization leaders, positively evaluated the contribution of nuclear power (9.03 points) and perception of nuclear power (8.38 points), and negatively evaluated the notion of public perception of nuclear power (4.65 points). In addition, religious leaders have the lowest evaluation with regards to the contribution of nuclear power (7.46 points) and the most negative perception of nuclear power (5.66 points). Non-governmental organization leaders, show a difference of 3.73 points between their perception of nuclear power and the notion of public perception, where religious leaders show a difference of -0.45 points.

**Fig. 2. Patterns in the Perception of Nuclear Power by Occupation**

### 3. Conclusions

To ensure the functionality of nuclear power facilities, key issues must be communicated to the public, and an effective plan for gaining public consensus during decision processes must be devised [1]. Since nuclear power generation in Korea is at standstill, blinded by a focus on mechanical and

technological solutions, without consideration of public concerns, it is emphasized that a new legislative framework be developed for the technical decision process based on democracy, in order to regain public trust.

### REFERENCES

[1] OECD. Nuclear development society and nuclear energy: Towards a better understanding. 2003.