

An Explorative Study of Application of Policy Argument to analyze Social Dispute on Nuclear Issues: focused on the Continuous Operation of Wolsong Unit 1

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1. Introduction

Nuclear energy continues to be controversial despite its many benefits. As nuclear energy policy issues have gained more attention in society, the public debate become more heated. Given that achieving social consensus is a prerequisite for securing the justification of policy decisions, it is crucial to understand how to bridge conflicts and achieve social consensus on controversial issues. It is important to understand the structure of the debate in context by analyzing the different arguments and rationales for and against each position. This study validates policy argument as a conceptual framework for analyzing the social debate. In doing so, this would contribute to the development of communication strategies and policy plans to build social consensus on nuclear energy.

2. Theoretical Background

2.1 Policy Argument

The concept of an argument is defined in different disciplines. In *logic*, an argument is viewed as an agreement in which propositions leading to a premise and a conclusion constitute a logically valid relationship [1]. In *rhetoric*, however, it emphasizes not only the constructive validity of the argument itself but also its communication to the outside world [2]. Policy science also emphasizes formal features such as logical structure, but like rhetoric, it considers the element of persuasion in the policy process as important. On a more pragmatic level, policy arguments are viewed as a way and means by which rational discussion can be operationalized [3].

The structure and components of a policy argument were presented by Dunn (1994), who applied Toulmin's argument model to policy analysis research. The components of the Dunn's policy argument model consist of policy-related information, policy claim, warrant, backing, rebuttal, and qualifier, respectively.

This study examines how the arguments that exist in society on issues related to nuclear energy are formed into a discourse and how they can be structured and analyzed.

2.2 Literature Review

After beginning of policy argument studies evolve in 1980s when focuses were mainly theoretical reviews aimed at confirming the usefulness of the concept of

policy argument, current research tends to apply it to analyze various controversial issues. The case studies analyzed range from the debate for and against the abolition of the *Hojuje*, Korean family headship system [4], the local education system [5], the *Saemangeum* project [6], the introduction of competition in the railway industry [7], nuclear power policy [8], and the issue of raising the subscription fee for public broadcasting [9].

This study is also aimed at adding an empirical case study to the literature on policy argumentation by applying the concept of policy argumentation to the case of the continued operation of the Wolsong Unit 1, a nuclear power policy issue that has both proponents and opponents.

3. Research Methods

3.1. Framework

This study approaches policy argument at a broad level. The modified policy debate model in this context is designed to visually compare the warrants and evidences on which the pro and con arguments are based for each given piece of policy-related information.

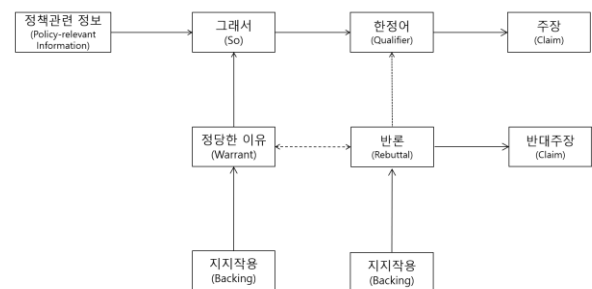


Fig. 1 Modified Policy Argument Model

3.2. Scope and Methods

As a case study, this research analyzes public opinion on the Wolsong Unit 1 during the 2015 decision to continue operating the plant and the 2019 decision to permanently shut it down.

I applied contents analysis, a qualitative research method in the social sciences, and adopted an axial coding strategy. The research materials were

documentary sources such as opinions and editorials published in newspaper. To collect the data, I used the Big Kinds (www.bigkinds.or.kr), an online news search service of the Korea Press Foundation, to collect 34 expert articles and 106 editorials related to Wolsong Unit 1 from January 1, 2010 to December 31, 2019. One of CAQDAS (Computer-assisted Qualitative Data Analysis Software), Atlas.ti ver.22, were utilized for enhancing the reliability of the analysis. [10]

4. Analysis Result

4.1. Argumentation among Opinions

Looking first at the timing of the decision, the arguments for and against continued operation had been disseminated in the form of media articles.

An examination of expert opinion pieces published in Korean general daily newspapers from 2012 to February 2015 reveals that a diverse group of experts, including university professors, lawyers, and researchers, as well as representatives of civil society organizations and executives of private company, argued for and against the continued operation of the Wolsong Unit 1. The argumentative components such as claims, arguments, and evidence raised in each article were interrelated and spread to form a discourse. The arguments for and against the continued operation of the Wolsong Unit 1 are opposed to each other as shown in the figure below.

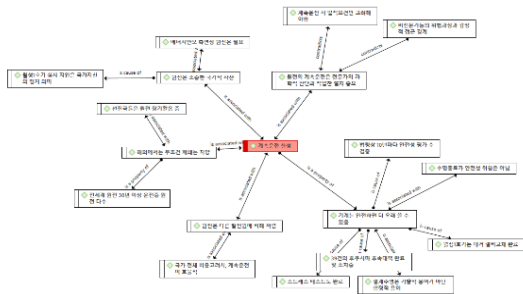


Fig. 2. Structure of expert discourse in favor of continued operation of Wolsong Unit 1

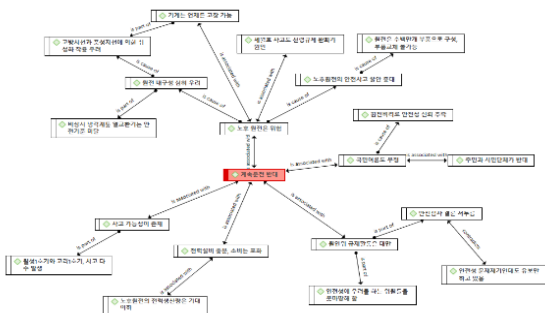


Fig. 3. Structure of expert discourse on opposition to continued operation of Wolsong Unit 1

4.2. Argumentation in Media

The number of collected media editorials on the continued operation of the Wolsong Unit 1 was 100 from 11 national daily newspapers in Korea during the period of the study.

Looking at the trends in the editorials, the editorials began to differ according to the tendencies of each newspaper between the two alternatives of continued operation and permanent shutdown. The core arguments of each newspaper's editorials are categorized into two groups: those favoring continued operation and those favoring permanent shutdown, and three neutral groups, such as those arguing for enhanced safety, as shown in Table 1 below.

The journalists' preferences for policy-making on Wolsong-1 were most in favor of continued operation, while those who favored permanent shutdown were mostly from the so-called liberal newspapers such as *Hankyoreh*.

Table 1: Distinguish the core arguments of editorials on Wolsong-1 by media outlets

News Paper	Prefer Continuous Operation	Prefer Permanent Shutdown	Neutral	Total
Kyunghyang	-	9	2	11
Shinmun	-	-	3	3
Kookmin Ilbo	2	-	2	4
Naeil Shinmun	-	-	3	3
Donga Ilbo	1	-	1	2
Munhwa Ilbo	9	-	-	9
Seoul Shinmun	1	-	4	5
Saekye Ilbo	7	-	4	11
Chosun Ilbo	24	-	-	24
Jungang Ilbo	5	-	3	8
Hankyoreh	-	8	3	11
Hankook Ilbo	-	3	9	12
Total	49	20	31	100

4.3. Visualizing Policy Argument

The results of applying the policy debate model to the public opinion on the continued operation of Wolsong Unit 1, which was formed through expert groups and media editorials, can be visualized as shown in the figure below.

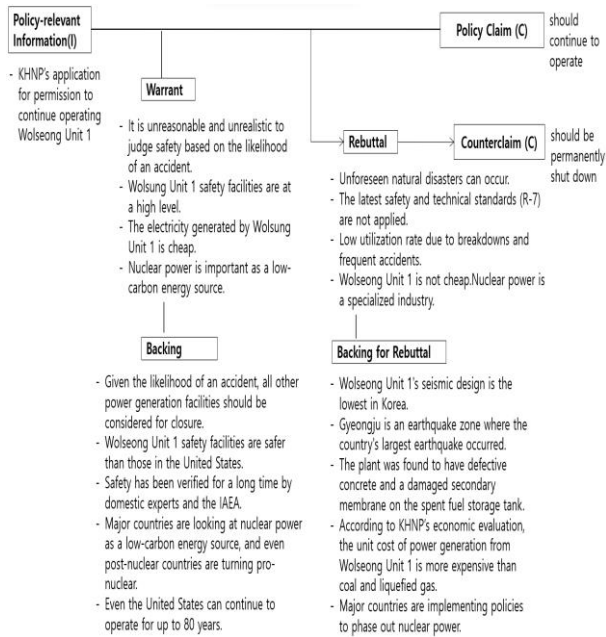


Fig. 4. Policy argument shown in the public media on the continuous operation of Wolsong Unit 1

5. Conclusions

This study analyzed the social discourse of support and opposition in the case of Wolsong Unit 1 through the concept of policy argumentation in policy studies and unraveled its logical structure.

As a qualitative study, it derived results that are differentiated from empirical studies through quantification and quantification through the existing quantitative approach. Through this study, we were able to identify the context and tendency of policy issues and structure social opinion in more detail, providing meaningful implications not only for establishing communication strategies but also for securing the legitimacy of policy makers.

As an exploratory study, further verification is needed by utilizing the concept of policy argumentation presented in this study and applying it to various cases in the future.

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