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論文の要旨

This thesis focuses on investigating science advice in Japanese environmental policymaking. In doing so, it aims to contribute to a deeper understanding of the use of evidence and expert advice as part of the policymaking process in general and in Japan specifically. At present, the role of science in determining public policy is increasing, and how expert advice is generated, integrated into the policy system, and then reflected in public policy is of paramount importance. This thesis addresses this challenge by examining what constitutes science advice, its institutional role and administrative regulation, who provides it (science advisers), and what influence such advisers have in the overall policy process as the guiding research questions for this study.

The author uses a combination of theoretical and methodological approaches to address the research questions. Using an originally developed triangularly science-intermediary-policy interface and drawing on power of knowledge and network relationship theories, the author developed a model that acknowledges the relevance of actors that act in the space between the science community and policy. While different types of science advisers have been suggested through previous researches, the author shows that these categorizations do not necessarily fit the case for environmental science policy advice, thus supporting the necessity for developing a new model. In order to test this model, the author used a mixed-methods approach, combining quantitative survey data within the GEPON 2 Japan (Global Environmental Policy Network) Survey with original qualitative interview data (13 interviews), and then performed network analysis techniques to demonstrate the position and influence of science advisers in Japan.

The thesis is structured as follows. Chapter 1 lays the groundwork for the study, providing some

background with regards to science advice in Japan (mainly since the Great East Japan Earthquake in March 2011), as well as showing the potential role of science advisers in the triangular science-intermediary-policy interface, and briefly introducing the mixed methods approach utilized in the thesis. Chapter 2 introduces the broad theoretical topic of governmental science advice, reviewing concepts about the relationship between science and policy, and introducing the international institutions such as the IPCC (Intergovernmental Panel on Climate Change) that have a major impact on climate policy. In describing the political nature of environmental science advice, this chapter illustrates the role of intermediary science advisers, discusses theorized types of science advisers, and explains their influence.

Chapter 3 provides detailed information on the background of policymaking in Japan, including a description of the science advisory process in Japanese policymaking with specific focus on environmental policy. The chapter starts with describing the situation surrounding the Great East Japan Earthquake, as this event engendered discussion and criticism concerning the relationship between science advice and government decision-making. Certain features of the Japanese government environment such as the relationship among government ministries, are also considered.

The power of knowledge and its networks are discussed in Chapter 4 as the main theoretical construct of the thesis. Combining theoretical approaches from three sociological approaches (sociology of knowledge, institutions, and networks), the author suggests that knowledge is a resource of political power, but needs to be accessible for policy actors particularly in the case of environmental policy. The author further discusses how the integration of and access to expert science advice can be a key element of decision making.

Chapter 5 describes the “explanatory sequential” research design that forms the basis of the methodological approach used within this thesis. The author provides an overview of mixed methodological approach, including definitions and rationale as to why this approach was chosen. The chapter also contains information about the analytical methods and procedures undertaken in this study to analyze the combination of survey data collected through the GEPON 2-Japan survey and originally structured interview data) utilized in the study.

Chapters 6 and 7 provide the results from the mixed-method analysis. Chapter 6, in responding to the first and second research questions, shows how science advice has been integrated into the Japanese environmental policy network by integrating the quantitative network analysis with the qualitative data from the interviews. Using the social network analysis technique of betweenness centrality, the author shows the “bridging potential” of science advisers, drawing on the discursive hegemony of the central actors and the ensuing struggle among actor groups in terms of their knowledge-exchange relationships.

Chapter 7 investigates the attributes of science advisers to explain their position in the network, drawing on discussions of the scientific culture as a causal factor for the distance between science and policy, as well as showing how the power potential of science advisers is calculated based on knowledge exchange relationships. The final section discusses the market-based research element in the Japanese science-policy interface.

The final chapter of the thesis reviews the purpose and findings of the thesis. The author revisits the science-intermediary-policy interface model introduced in the first chapter and shows how the model has

been impacted through the findings of this research. The author further concludes that despite large investments in science, as well as research and development, the centralized authority system and the relationships among agencies as actors contribute to defining the role of science advisers in the Japanese environmental policy network system. The author suggests that further comparative research may elucidate if similar models exist in other countries.

審査の要旨

1 批評

Previous research in environmental policy networks in general, categorizations of science advisers, and identifying science adviser roles and relationships in relation to other policy actors have tended to be descriptive in nature. These studies have provided key theoretical bases from which combined quantitative and qualitative approaches can be refined. The within thesis is the first such study to approach the topic of environmental science advisers in Japan, to assess their role, and categorize their knowledge exchange in a network formation. As such, the within study advances our theoretical and practical understanding of science advisers and their role, as well as laying new groundwork for methodological approaches.

This thesis has distinct strengths in its overall approach and design. First, in terms of theory, although previous researches have described the role and potential power of science advisers, this study goes deeper to develop a model of science advice and exchange that incorporates a combined theoretical approach. As a result of this theoretical combination, the study explores new perspectives in describing the role of science advisers and possibly new categories. A second strength is that this research uses combined quantitative and qualitative approaches, incorporating survey data with interview results, and then applying network analysis techniques. The development and deep consideration of mixed-methods research design have resulted in methodologically robust results that can be further utilized in future comparative environments. This research makes an important contribution to advancing our theoretical and practical understanding of the network of science policy advisers in Japan.

This thesis has only a few very minor weaknesses. One limitation within the study is the small number of interview subjects for the qualitative data collection. However, this minor limitation is offset by the richness of the interview data, and its combination with a quantitative analytical approach. The above strengths, combined with the author's detailed analysis of the research findings and drawing out the current and future implications of this research, have promising implications for future research in this area.

2 最終試験

The final examination committee conducted a final examination on January 17, 2020. The applicant provided an overview of the dissertation, and addressed questions and comments raised during the Question-and-Answer session. All committee members reached a final decision that the applicant passed the final examination.

3 結論

Therefore, the final examination committee approved that the applicant is qualified to be awarded a Doctor of Philosophy in Social Sciences.