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## Public policy structuring incorporating reciprocal expectation analysis

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#### ABSTRACT

This paper proposes a method of structuring public policy by incorporating reciprocal expectation analysis. The proposed method is characterized by three components: identification of the problem structure perceived by stakeholders using cognitive maps, policy structuring analysis with a value-driver matrix and a reciprocal expectation matrix, and feasibility analysis of agreements among the stakeholders. The three types of relationship among stakeholders are derived from the feasibility analysis, which are "Dosho-imu", "Isho-imu", and "Domu". Three tests of feasibility to reach the agreement are then proposed: "information-sharing test", "bargaining test", and "reframing test". A case study is presented, applying the method to strategic transportation planning in the Kanto region of Japan. Finally, the potential functions of the proposed method in practice are discussed.

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#### 1. Introduction

Generally, public policy is created to solve explicit or implicit social problems. In most cases, the public policy maker, such as the government or public agency, proposes and implements the public policies addressing social problems. The social problems tackled often affect a large number of people and arise from within a complicated structure with many interrelated factors. However, the perception of social problems may differ across participants. Therefore, in order to achieve successful outcomes, public policy makers need to understand these different perceptions and analyze the problem structure from a multidisciplinary viewpoint. This is particularly critical when more participants are involved in the social system of interest, because it becomes more challenging for public policy makers to fully comprehend the range of viewpoints. Indeed, inaccurate speculation and the misunderstanding of participants' perceptions of social problems may lead to a deadlock in reaching agreements. A well-designed and sophisticated method for understanding a participant's problem perception and its feedback to the stakeholders may contribute significantly to better planning and management of the social system.

In public policy studies, knowledge "in" public policy process is typically differentiated from knowledge "of" public policy process (Lasswell, 1971). Knowledge "in" public policy process is aimed at solving public policy problems, whereas knowledge "of" public policy process is aimed at analyzing public policy process. In the knowledge "in" public policy process, problem structuring is widely recognized as one of the preconditions of problem solving, particularly when different stakeholders have competing problem definitions (Bardach, 1981; Dunn, 2004). The appropriate method should be selected in public policy process, depending on the policy context (Dryzek, 1983; Linder & Peters, 1985; Bonrow & Dryzek, 1987).

In recent decades, a range of participatory and interactive methods called problem structuring methods (PSMs) have been developed, especially in Europe, as complements to traditional quantitative OR methods, rather than their alternatives (Ackermann, 2012; Mingers, 2011; Paucar-Caceres, 2011), in order to support group decisions in scenarios characterized by "practical problems" (Ravetz, 1971), "wicked problems" (Rittel & Webber, 1973), "messes" (Ackoff, 1979), and "swamp conditions" (Schon, 1987). These are methods for decision making in the presence of multiple actors, multiple perspectives, incommensurable and/or conflicting interests, important intangibles, and key uncertainties (Mingers & Rosenhead, 2004). Additionally, mixing of PSMs is an area of increasing interest (Howick & Ackermann, 2011). This paper adds a new method to the body of research related to PSMs in the context of public policy. As with conventional PSMs, the present paper highlights the agenda-setting stage, including the problem definitions in the public policy process. This stage represents a critical process in which policy makers search for potential policy options based on the broad range of information collected from the multiple actors under conditions of major uncertainty.



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The present paper also highlights the decision-making stage for problem solving, using a feasibility analysis of agreements.

This case-oriented paper includes the proposal of a new method, which is characterized by three components: identification of the problem structure perceived by stakeholders, policy structuring analysis, and feasibility analysis of agreements among stakeholders. First, the cognitive map approach is used to identify the problem structure. In particular, semi-structured interviews are utilized to collect information from the stakeholders. Second, a value-driver matrix and a reciprocal expectation matrix are developed in the policy structuring analysis. Finally, these matrices are used to assess the feasibility of agreements among the stakeholders. The paper categorizes the types of relationships among the stakeholders into three types. It should be noted that the evaluation of impacts of the policy option is out of our scope. A number of methods have been developed to evaluate the impacts of options from the viewpoints of plural criteria, including analytic hierarchy process (Saaty, 1980).

The paper is organized as follows: the motivation and goals of the paper are presented in Section 1. Section 2 presents the literature review. Section 3 describes the proposed method. Section 4 details an empirical case study with the proposed method and a discussion of the case study. Finally, Section 5 discusses the implications of these results for public policy.

#### 2. Literature review

Among the PSMs developed during the last decade, the most widely adopted approaches are soft systems methodology (SSM; Checkland, 2001), strategic choice approach (SCA; Friend, 2001), and causal/cognitive map-based methods (Eden, 2004). These cognitive map approaches include strategic options development and analysis (SODA) and its journey-making variant (Eden & Ackermann, 2001). In any of these methods, models are populated with data specific to the problem situation, are seen as transitional objects, and are designed to facilitate negotiation and agreement rather than to find optimal solutions (Eden & Ackermann, 2006). These methods have been successfully applied to various cases (Mingers & Rosenhead, 2004) in both the private and public sectors (Brown, Cooper, & Pidd, 2006; Eden & Ackermann, 2004; Georgiu, 2009; Sachdeva, Williams, & Quigley, 2007; Ulengin, Kabak, Onsel, Ulengin, & Aktas, 2010). Drama theory is another PSM, which proposes a model that aims to describe a situation where stakeholders try to bring about different outcomes and each side must try to take into account the others' possible actions (Bennet, Bryant, & Howard, 2001).

The method proposed in the present paper also aims to facilitate negotiation and agreement. It is similar to the above methods in the following respects: first, it involves stakeholders who have some responsibility for decision making in the situation; second, the problem structure is generated by these stakeholders; and third, it assumes that increased and more equal participation from the stakeholders is likely helpful in increasing the overall productivity of group processes (Eden & Ackermann, 2006). In addition to the above features, our approach proposes a method for exploring potential policy options by analyzing the social values and the drivers of social change. Furthermore, this method highlights the three types of relationship among the stakeholders that potentially lead to agreements, which are derived from their actions, their reciprocal expectations, and the goals associated with the actions. It is expected that this method will facilitate agreements more strategically, particularly in the context of the public policy making process, where the stakeholders typically act more independently than they do in the context of in-organizational decision-making processes.

#### 3. Methodology

#### 3.1. Method description

The proposed method targets the following three goals: to comprehend the problem structure by understanding the stakeholders' perceptions of the problems; to discover the potential policy options by analyzing the social values and the drivers of social change, and by identifying the actions that one stakeholder expects another to perform, using the reciprocal expectation matrix; and to assess the feasibility of the policy options by analyzing the value– driver matrix and the reciprocal expectations among the stakeholders. The proposed method highlights the diverse nature of the participants' perceptions of the problems (see Fig. 1 for an overview).

First, the potential stakeholders are selected in relation to the problem. A "stakeholder" is defined as a participant who can influence or be influenced by the corresponding problem. For identifying stakeholders to be interviewed, various qualitative approaches have been proposed, such as stakeholder-led stakeholder categorization, actor-linkage matrices, social network analysis, and snowball sampling (Reed et al., 2009). Our case study applies the snowball sampling developed by Susskind, McKearnen, and Thomas-Lamar (1999). This is mainly because the interviews are expected to be more acceptable with this method, particularly in the context of Japan. Note that other approaches of stakeholder selections could be applied, according to the context of case study. In the snowball sampling, after selecting potential stakeholders as a "first circle" of stakeholders, each stakeholder is interviewed to suggest others who may be relevant to the problem. If they are not included on the list of the first circle of stakeholders, these subsequent stakeholders can be thought of as a "second circle" of



Fig. 1. Work flows of policy structuring method.

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