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Network management and environmental effectiveness: the management of end-of-life vehicles in the United Kingdom and in Sweden

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Abstract

The principle of extended producer responsibility (EPR) has been a policy paradigm behind the development of waste policies in the European Union including the End-of-Life Vehicle (ELV) Directive (2000/53/EC). This study compares and explains the environmental effectiveness of the ELV programmes in the United Kingdom and in Sweden between 1990 and 2005, using a framework that integrates the Dutch approach to policy network analysis (PNA) with a theory-based evaluation (TBE). It finds that: (1) the perception of the producers towards EPR can be influenced largely by their social interaction with other actors, (2) the announcement of policies, and (3) the cohesion of policy instruments are key factors affecting the effectiveness of the programmes. As the latter two depend on the determination and comprehension of national governments, the transposition of the EU EPR Directives might not automatically lead to effective implementation and intended outcomes unless the Member States adhere to the principle and the development of its intervention theory.

Keywords: Extended producer responsibility; ELV Directive; Network management; Theory-based evaluation; Policy paradigm

1. Introduction

The (lack of) arrangements when a car turns into an end-of-life vehicle (ELV) have prevented society from harnessing the environmental benefits from ELV, despite its highly recoverable contents. The problem of abandoned vehicles reflects not only a deficiency in waste collection but also a waste of resources. Moreover, treatment activities can adversely affect the environment, e.g. when hazardous substances are released into the surroundings. It is estimated that around 2.2 million tonnes of automobile shredding residue (ASR) was landfilled in 1998 alone, constituting 10% of total hazardous waste in the EU [1]. Regarding recyclability, an increasing proportion of polymeric materials in car models of the late 1980s and early 1990s would mean a decrease in the recyclability of ELV in the 2000s unless there were changes in recycling methods and technologies.

The Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles (the ELV Directive) [2] emerged from this context. ELV was one of the six waste streams in the 1991 Priority Waste Streams Programme. The European Commission produced a proposal for a Directive in 1997. After an extended period of consultation and negotiation, the ELV Directive was finally entered into force on 21 October 2000. The main features of the Directive include the free-take-back provision, the targets for re-use, recycling and recovery (RRR), and the restriction of the use of lead, mercury, cadmium and hexavalent chromium in new vehicles (i.e. those put into the market after 1 July 2003). The ELV Directive is also the first Community Directive to explicitly endorse the principle of extended producer responsibility (EPR). It prescribes liability, physical, financial and information responsibilities of a producer – a manufacturer or a professional importer of vehicles. Member States are obliged to transpose the Directive into national legislation by 21 April 2002.

This comparative study explores the impacts of network management on the environmental effectiveness of the

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programmes for the management of ELV in the United Kingdom (UK) and in Sweden from an EPR perspective. It employs a framework that integrates the Dutch approach to policy network analysis (PNA) and theory-based evaluation (TBE) under a policy paradigm. The analytical framework and its main components are described in Section 2. A full account of the theoretical development can be found in Ref. [3]. Section 3 presents the research design and methodology used in this study, followed by a brief description of the cases in Section 4. Results from the evaluation and the analysis are presented in Section 5. The last part concludes the paper with final remarks.

2. Analytical framework

Fig. 1 presents the analytical framework of the study. The framework is developed to explain the process behind policy changes and its impacts on the effectiveness of a programme.

2.1. Theoretical components: PNA, TBE and policy paradigm

PNA is one of the dominant frameworks in contemporary policy analysis in Europe [5,6]. Kickert et al. [7] define policy networks as ''stable patterns of social relations between interdependent actors, which take shape around policy problems and/or policy programmes''. In this study, the Dutch approach to PNA [4,5] was chosen because of its focus on network management as an independent variable (unlike, for example, a structure-oriented tradition in the British PNA). The approach also enabled the capture of three groups of key variables in policy analysis – institutional, social and cognitive – and their interactions with network management, as shown in Fig. 1.

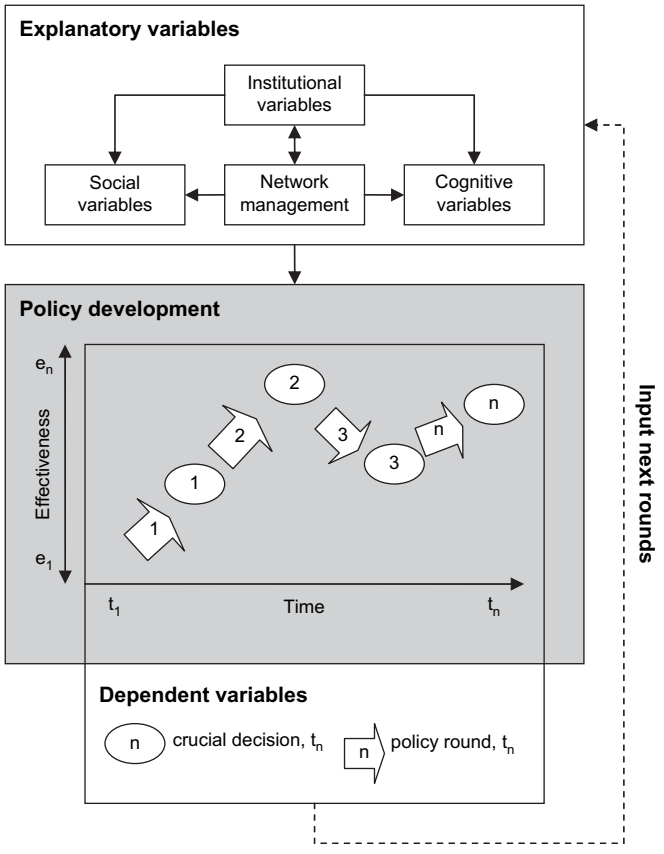

Fig. 1. The analytical framework, adapted from Ref. [4]. However, their assessment criteria are replaced by TBE used to determine the effectiveness of a programme, i.e. the vertical axis.

Network management is ''a form of steering aimed at promoting joint problem solving or policy development'' [8]. Policy development in a network might experience impasses when actors controlling vital resources withdraw their cooperation. Fixations either in their social form, i.e. certain actors are excluded from the interaction either formally or informally, or in their cognitive form, i.e. certain ideas are excluded from the interaction either consciously or unconsciously, are the main source of this collective action problem [9]. To break through these impasses, network management strategies at both game and network levels aiming at either social or cognitive aspect are necessary. Examples of such strategies are bargaining, reframing, selective (de)activating, and changing incentives.

The problem of the Dutch approach lies in its evaluation scheme. Its bottom-up and individualistic normative stand limit the evaluation only to the quality of policy processes and Dutch PNA studies are generally muted on the evaluation of the policy content and outcomes. However, it is not necessarily that 'good' policy processes will produce 'good' outcomes. To remedy this weakness while retaining the strength of the framework, this study reintroduces substantive evaluation through TBE.

TBE is an evaluation based on a theory of how a programme operates. It rests on the premise that every programme has its assumptions about the causal relationships between processes and outcomes – an intervention theory – though rarely are programme designers or implementers explicit about them. Cole [10] further distinguishes three elements of intervention theory: problem/aetiologic theory which explains the determinants of the problem; intervention theory which relates programme activities with each determinant; and, cause/effect theory which explains in detail how each activity is intended to work.

In general, intervention theory consists of three interrelated components: (a) the ultimate, long-term outcomes, (b) the intermediate outcomes/markers and (c) necessary components/stages of the programme. These components serve as a standard of comparison for discrepancy in the evaluation of actual programmes. The theory-based evaluator does not measure only the intended outcomes, but also collects data about how well each step of the sequence is in fact borne out [11,12]. Therefore, TBE is well-suited to evaluate the effectiveness of the programme in terms of its attribution.

The concept of policy paradigm – ''a framework of ideas and standards that specifies not only the goals of policy and the kind of instruments that can be used to attain them, but also the very nature of the problems they are meant to be