DECLINE OF LIGNITE MINING IN THE CZECH REPUBLIC
Exploring the role of expert knowledge

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Introduction

Although institutional setting and policy processes involving diverse organizational actors are considered to be key structural drivers influencing public (and political) acceptance of energy-related operations (Prno & Slocombe 2014), their research is under-developed. In this context, we use Advocacy Coalition Framework (ACF) to map and analyse the advocacy coalition structure of the lignite mining policy in the Czech Republic. Advocacy coalition is defined as a group of actors that *share policy core beliefs* and *engage in a nontrivial degree of coordinated activity* (Weible et al. 2009). Thus, the ACF assumes that actors' policy positions are more importantly defined by their coalition membership, than by their institutional or sectoral affiliations. The first component, *policy core beliefs* are assumptions about how the subsystem ought to be organized. They are highly salient and produce cleavage(s) within the subsystem. The second component captures, often informal, *interactions* among the actors. We focus on (1) *"targeting" practices* based on provision of expert information to state actors done by environmental non-governmental organizations (ENGOs) and industry. Here, expert knowledge is used for policy persuasion and produces a policy polarization if practiced by opposing interest groups. Hence, we explore (2) *patterns of expert information exchange* and test whether they tend to take place prevailingly within or across coalitions. The former would encourage policy learning, the later coalition cohesion and policy polarization.

Case description

The Czech Republic, a third largest electricity exporter in the EU, represents a post-communist case of semi-consensual model of democracy with a coal-based economy. The lignite production of 40 Mt per year accounts for 46% of TPES, 51% of electricity mix, and 44% of the heating industry's fuel mix. The exploitable reserves of lignite are around 800 mil. tons (Mt). Besides, there are 150 Mt of reserves behind the "territorial ecological limits of surface coal mining" established by the first post-communist government in the Sokolov Basin and the North Bohemian Basin. A lifting of "the limits" has been one of the key issues in the Czech energy policy from their introduction in 1991.

Method

We use data from a survey of 83 organizations involved in the Czech lignite mining subsystem. The respondents were representatives of the listed organizations. The response rate was 78 percent. To ensure confidentiality, the results only contain information on organization type. Social network analysis was used as a methodological framework. We have applied exploratory techniques such as faction analysis and cluster analysis to detect coalitions and applied deductive block modeling to test hypotheses on targeting and expert information exchange patterns. Block model is a simplified representation of a network that consists of groups of nodes that have similar relations to others (blocks) and patterns of relations among nodes and blocks (social roles). Deductive blockmodeling then compares observed structures to hypothesized models and thereby allows to test hypotheses about structural configurations of the network.

Results: coalition membership and attributes

In line with theoretical expectations, we have identified two relationally cohesive as well as belief-homogenous subgroups, *Industry Coalition* (IC) and *Environmental Coalition* (EC), and one residual subgroup not distinct form the overall structural properties of the network. We further described attributes of the coalitions, such as their reputational power, position in terms of policy core beliefs, density as well as centralization of within-coalition interactions. The both coalitions are heterogenous in terms of the involved organizations and ideologically mutually distant.
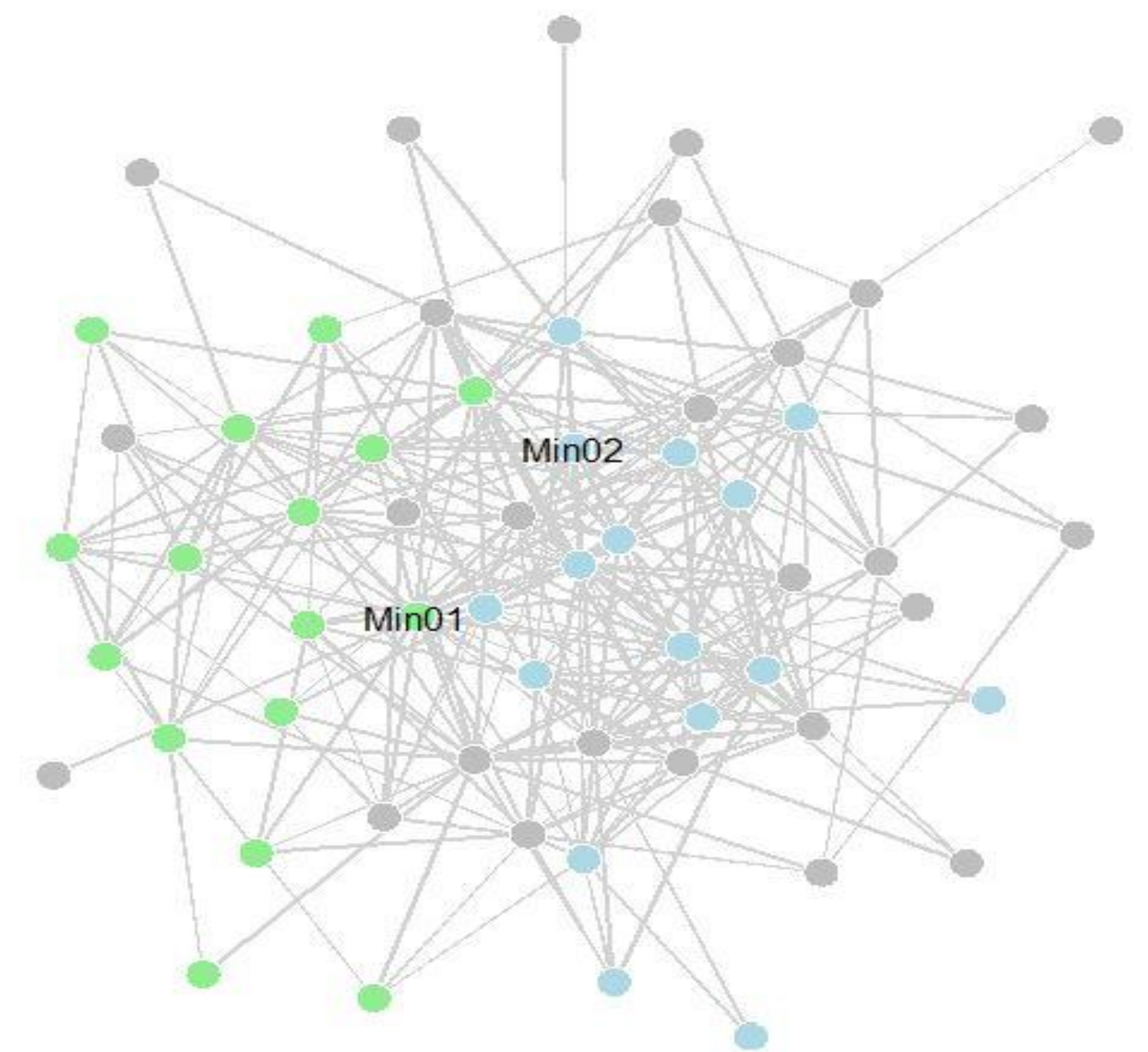

Fig. 1. The lignite mining political network includes the Industry Coalition (coded in blue), the Environmental Coalition (green), and residual actors (grey). The node size represents reputational power
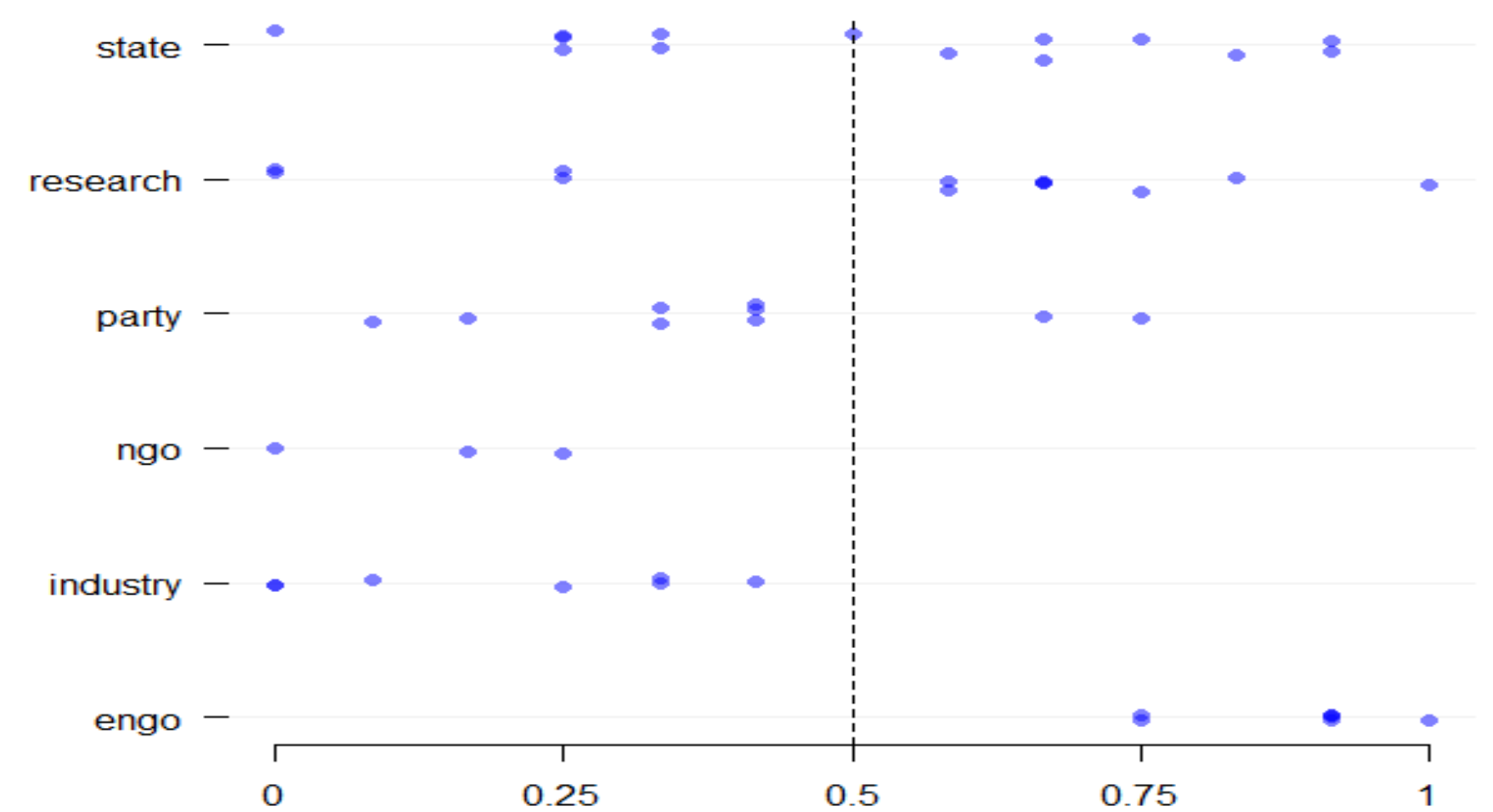
Industry Coalition (n = 16)	Environmental Coalition (n = 16)
2 research organizations 2 political parties (region) 1 political party (central) 2 NGOs 2 state agencies (region) 2 state agencies (Ustí) 5 companies	6 ENGOs 3 state agencies (central) 2 political parties (central) 5 research organizations

Tab. 1. Coalition membership

Fig. 3. The CSA open-pit mine

Fig. 2. Policy beliefs on lignite mining by actor groups
Note: 0 indicates most pro-mining position, 1 most anti-mining position

The reputational power of the coalitions is at similar level. The EC is more dense and centralized than the IC which indicates higher level of coordination and presence of dominant actors (Tab. 2). Notably, two key state actors, more specifically two competent Ministries, belong to different coalitions (Fig. 1). We argue that this prevents any major policy change. This is reinforced by high policy beliefs fragmentation of the whole state sector (Fig. 2).

	reputational power	policy	econ	enviro	process	density	degree cent.
IC	0.31	0.21	0.34	0.39	0.36	0.225	0.162
EC	0.26	0.81	0.59	0.93	0.9	0.279	0.367
Total	0.21	0.49	0.43	0.63	0.59	0.088	0.176

Tab. 2. Coalitions' attributes. Note: the variable values range between <0, 1>

	ENGOs	industry	state	rest
ENGOs	**0.881**	0.086	**0.429**	0.054
industry	0.043	0.089	**0.225**	0.081
state	0.143	0.150	**0.333**	0.137
rest	0.051	0.064	0.202	0.061

Tab. 4. Density matrix blocked by actor type
Bold values indicate < 0.05

	IC	EC	rest
IC	**0.467**	0.161	0.158
EC	0.147	**0.492**	0.064
rest	0.186	0.127	0.091

Tab. 5. Density matrix blocked by coalitions
Bold values indicate < 0.05

Results: 'targeting' and expert information exchange patterns

The results of the first block model (Tab. 4) show that the targeting via expert information is practiced both by the ENGOs as well as industry actors that constitute cores of the two coalitions. In result, the decision-making actors are being influenced by the two competing groups which contributes to a policy gridlock.

The results of the second block model (Tab. 5) show that expert information exchange tends to be present more often within than across coalitions.

These results support an argument that expert knowledge is used rather to policy persuasion than for policy learning. The establishment of policy venues that would encourage cross-coalition interaction, including expert information exchange, should be considered.

Literature

Prno, J., Slocombe, D. S., 2014. A system-based conceptual framework for assessing the determinants of a social licence to operate in the mining industry. *Environ. Manag.* 53: 672-689.

Weible, Ch. M., Sabatier, P. A., and McQueen, K. 2009. Themes and Variations: Taking Stock of the Advocacy Coalition Framework. *The Policy Studies Journal*. 37: 121-140.

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