

INSTITUTIONAL UNCERTAINTY AS PUBLIC POLITICS: CLIMATE CHANGE HEARINGS & NEW TECHNOLOGY DEVELOPMENT

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INTRODUCTION

The literature at the intersection of social movements and institutional theory has emphasized the potent influence that collective activists can have on organizations through the institutional environment, a strategy known as public politics (King & Pearce, 2010; Tolbert, David, & Sine, 2011). However, there has been much debate among social movement scholars concerning the efficacy of activists on public politics, particularly at the policy level (Olzak & Soule, 2009). Some studies have found social movements to impact regulatory outcomes while others have not (Hiatt, Sine & Tolbert, 2009; Soule & King, 2006). This inconsistency may be due to a couple of factors. First, this research has taken a limited view of the policy process: by focusing only on the final or imminent adoption of a particular law and its impact on organizations, studies have overlooked the effect that the policymaking process may have on firm behavior (Burstein & Linton, 2002; Dobbin & Dowd, 1997). Second, there is a discrepancy among researchers regarding the characterization of public and private politics. Public politics tactics seek policy or institutional change, while private politics tactics seek to threaten an organization's image and reputation through boycotts and protests (King & Pearce, 2010). Although extant research acknowledges the differences between public and private politics, few studies distinguish their mechanisms and examine whether they (individually and interactively) lead to differential organizational outcomes. Given that the two often go hand-in-hand—private politics often leads to policymakers' reaction (Soule & King, 2006)—it is possible that the findings regarding social movements' impact on organizations via public politics may have been confounded by concurrent private politics.

We explore the effect of movement-induced policymaking process and movement protests on internally and externally directed organizational actions. By so doing, we seek to discover whether social movements can indeed influence organizations through public politics even if their demands never become legally institutionalized and whether public and private politics foster differential organizational responses to movement demands. We develop a framework that highlights how activists can influence organizations by creating regulatory risk in the early stages of the policymaking process and by tainting a firm's reputation through protests. In order to reduce the perceived regulatory risk and reputational damage, we suggest that organizations will take internal and external actions that seek to address activists' demands.

THEORY AND HYPOTHESES

Organizational Responses to Public Politics

Up to now, research at the intersection of social movements and organizations has focused primarily on the ability of movements to garner lawmakers' attention and on the impact of passed legislation on firms. No research that we know of has examined whether and how the early stages of policymaking affects organizations and how organizations will respond (della Porta & Diani, 2006). Understanding the impacts that the policymaking process can have on organizations could highlight an additional mechanism by which activists can influence organizational actions as well as contribute to prior work that has narrowly focused on institutional outcomes. In addition to reputational threats and policy outcomes, we propose that activists can influence organizations by fomenting regulatory risk through the policymaking process. In particular, we propose that this risk is highest at the stage in which Congress holds hearings and debates a variety of ways to address movement demands, but where convergence on a solution has not occurred leaving the probability of regulation ambiguous. Congressional discussion of movement demands may motivate organizations to take internal actions that address those demands. Such actions may reduce regulatory risk by discouraging the continuation of the policymaking process or, if it were to continue, by possibly influencing policy formulation in a way that leads to more favorable legislative outcomes. Hence, we argue:

H1: Policymaker responsiveness to social movements via congressional hearings will be associated with greater adoption of firm practices or technologies that address movement demands and potential policy goals.

The development of these new technologies is likely to be moderated by the organization's ability to deal with any unknown costs and burdens associated with potential policy. Prior empirical work supports the notion that organizations which are highly dependent on government, such as those with significant cost burdens imposed through regulation, are more likely to take actions and engage in multiple corporate political tactics to influence public policy (Schuler, Rehbein, & Carter, 2002; Oliver & Holzinger, 2008). Firms whose profitability is dependent on favorable government regulation have also been found to take internal and external actions in response to government signals of normatively appropriate corporate behavior (Marquis & Qian). Therefore, we suggest that the more organizations are dependent on resources that are affected by potential new policies, the more they will develop and adopt new technologies that can address movement demands. Thus, we argue:

H2: The impact of movement-induced policymaking process will be moderated by firms' dependency on resources impacted by potential policy goals.

Organizational Responses to Private Politics

In addition to public politics, activists can affect organizations through private politics tactics such as consumer boycotts, protests, and blockades (McDonnell & King, 2013). These tactics differ from public politics in that instead of going through policymakers or the courts to alter policies, they seek to alter the public's view of the company by threatening its image and reputation (Eesley & Lenox, 2006). Thus, the two different tactics rely on separate mechanisms of influence: the former relies on coercive and economic influence from the state while the latter relies on public shaming to foster organizational responses to movement demands (Baron, 2003;

King & Pearce, 2010). Notwithstanding the theorized differences, scholarship has failed to explore whether these two tactics foster differing organizational responses to collective action.

We suggest that in contrast to the impact of public politics, which fosters internal actions, private politics will foster externally directed actions in an effort to convince important audiences of the value of the technologies and practices. Private politics draw public attention to controversies and can frame organizations and their actions as wrong, unethical, or immoral (Vasi & King, 2012; Weber, Rao, & Thomas, 2009), cause damage to its reputation and image (King, 2008; King & Soule, 2007), and thereby instill skepticism and doubt in the minds of policymakers as to the veracity of firms' claims that their actions address movement demands and potential policy goals (Barnett, 2007; Barnett & King, 2008). We explore two kinds of external actions that organizations may engage in: seeking affiliations with organizations that address movement concerns and linguistically framing the technology as a solution to movement demands through the media.

Prior literature shows that when the quality of a novel technology cannot be directly observed, perceptions can be influenced based on the status of affiliated organizational actors (Podolny, 1994; Benjamin & Podolny, 1999; Stuart, Huang, & Hybels, 1999). Similarly, the normative appropriateness of an organization's novel technology is often signaled by public affiliation with prominent, established individuals or organizations (Navis & Glynn, 2010). Organizations facing reputation threats from social movement activism, therefore, may choose to affiliate with such high-status individuals, such as scientists, who can signal to important audiences such as policymakers that firm actions are genuinely meeting movement demands and potential policy goals. We expect:

H3: Private politics via protests will be associated with greater firm affiliation with prominent experts who promote their technology as solutions to movement demands and potential policy goals.

In addition, increased protests may induce firms to frame their actions as solutions to movement demands through linguistic accounts. Scholars have found that organizations that engage in linguistic framing via press releases and other corporate documents can shape how audiences assess their identity and practices (Bansal & Clelland, 2004; McDonnell & King, 2013). In particular, the more messages are repeated, the more likely they will be perceived as legitimate by external audiences, and the more audiences will accept them and take them for granted as solutions to movement demands (Kennedy, 2008). As organizations' narratives gain legitimacy in the eyes of key audiences such as policymakers and citizens, it improves the probability that the firm actions will be accepted by policymakers as meeting the demands of social movements and potential policy goals, which may lead them to halt the policymaking process or include the new technology into the discussion if the policymaking process were to continue further. Thus, we argue that as regulatory risk increases, the more firms will frame their technology as solutions to movement demands by issuing press releases.

H4: Private politics via protests will be associated with increased framing of firm actions as solutions to movement demands and potential policy goals.

Interaction of Public and Private Politics

The impact of private politics on firms seeking affiliation with prominent organizational actors and framing their actions as solutions to movement demands is likely to be moderated by public politics. Private politics tactics can damage organizational reputations and make organizations appear less trustworthy and disingenuous. Yet, maintaining a good reputation in the eyes of policymakers is likely to be more important for firms facing regulatory risk via congressional hearings. As noted earlier, we argued that in response to regulatory risk organizations develop internal practices to address movement demands and potential policy goals with the purpose of either stopping the policymaking process from progressing or to influence process so that policymakers take into account their actions in potential policy. However, for policymakers to believe that their actions address movement demands they must trust that organizations will faithfully adhere to their voluntary actions and not simply defect once regulators have agreed not to regulate by more conventional means (Potoski & Prakash, 2004). Reputational damage from private politics tactics can undermine that trust, leading firms to engage in external actions to lessen the damage. Consequently, we expect that seeking affiliations with prominent experts and engaging linguistic framing will increase as congressional hearings on climate change increases. Thus we argue:

H5: The impact of private politics on firms' seeking affiliation with prominent experts will be positively moderated by greater congressional hearings.

H6: The impact of private politics on framing of firm actions as solutions to movement demands and goals will be positively moderated by greater congressional hearings.

EMPIRICAL CONTEXT: U.S. OIL & GAS INDUSTRY

In this study, we focus on the adoption of enhanced oil recovery (EOR) technology. The petroleum production process entails several stages. The primary and secondary stages involve finding a reservoir, drilling wells, and then pumping the oil from the reservoir. EOR is a tertiary stage which extracts crude oil beyond primary and secondary production stages. The use of EOR technologies can be extremely valuable to oil and gas companies as they can increase the amount of oil extracted from a reservoir by 30 to 60 percent (Ali & Thomas, 1994). A number of different EOR technologies have been developed including steam injection, in-situ combustion, electrical heating, chemical flooding, and miscible and immiscible gas injection (Moritis, 2010).

In response to increased congressional hearings responding to social movement demands for climate change policies, oil and gas firms began making investments to develop enhanced oil recovery technologies that would provide them additional value as a potential solution to address activists' demands while at the same time benefit them in the extraction of petroleum. The technology they developed and adopted was CO₂ injection in which CO₂ is injected into a reservoir to displace oil and in the process is permanently sequestered underground. This technology, therefore, became a potential solution to climate change by removing CO₂, a greenhouse gas, from the atmosphere. Oil and gas companies viewed this technology as a solution to social movement demands and potential policy goals and adopted this largely unprofitable practice in response to the regulatory risk.

In addition, oil and gas companies took external actions to ensure that the practices they developed and adopted to address social-movement goals would be accepted by important audiences. One way they did this was by affiliating with organizations staffed with prominent

scientists. Many oil and gas companies created and joined climate change organizations staffed with climate change experts and brought their CO₂ injection technology to the table as a solution to remove CO₂ from the atmosphere. Oil producers also sought to ensure that outside audiences viewed their actions as solutions to movement goals through press releases that touted the benefits of their technologies to mitigate climate change.

METHODS

Our sample consists of all EOR well data and information on all publicly traded U.S. oil and gas corporations from 1982 through 2010, encompassing 748 companies and over 50 EOR projects. Of those 748 companies, 82 (11%) engaged in enhanced oil recovery and 43 (6%) had at some point developed and adopted CO₂ well injection as their choice of EOR technology.

Variables

Our dependent variables are *adoption of practices* that address movement demands, *affiliation seeking*, and *linguistic framing* of practices. We calculated practice adoption by summing the number of enhanced oil recovery (EOR) projects utilizing CO₂ injection a company was operating in a given year. These data came from the *Oil and Gas Journal*. We calculated firms' seeking affiliations by summing the number of carbon capture sequestration associations, staffed by scientific experts on climate change, that an oil and gas company was affiliated with in a given year. We calculated linguistic framing of firm practices by counting all press releases promoting CO₂ injection EOR technologies released by all companies in the dataset as a viable carbon sequestration strategy which addresses climate change by firm-year. These data came from Lexis-Nexis business wires.

The predictor variables for this study are the number of *hearings on climate change* that occurred in the U.S. Congress in a given year and *firm protests*. Regarding the former, we conducted specific searches of the U.S. Library of Congress's THOMAS database for hearings on greenhouse gases such as carbon dioxide and methane as well as hearings on general climate change issues. We measured *firm protests* by summing the annual number of protests related to climate change against oil and gas companies reported in local and national U.S. newspapers using the Lexis-Nexis newspaper database. All predictor variables were lagged by one year.

We controlled for a number of factors that could affect whether a firm adopts EOR CO₂ injection technologies: *price of crude oil*, *firm revenues*, *net profit margin*, *return on equity*, *asset turnover*, the *return on assets*, and *research and development to sales*. We also controlled for the percentage of a firm's U.S. *crude-oil reserves*, the U.S. *crude oil to natural gas ratio* by company, the *number of EOR projects* a firm engaged in, and how many projects were *joint ventures* with other companies in a given year. We also included *firm* and *year fixed effects* to control for any unobserved firm and time varying factors.

Analysis

A firm's decision to adopt a particular EOR technology is likely to be conditioned on unobserved factors that influence a firm's decision to engage in EOR in the first place. To correct for this potential bias, we employed a two-stage Heckman (1979) selection model to calculate the extent to which firms adopted climate change technologies. To analyze the effect of

policymaking process on firm membership of climate change organizations and on firm press releases, we conducted a linear regression with the inverse Mills ratio in order to correct for firm self-selection into enhanced oil recovery activities, in harmony with prior research (Shaver, 1998). We also ran a robustness test of the effect of climate change hearings on technology adoption at the EOR project level using a logistic analysis. We also ran a logistic analysis on the EOR project profitability of using CO₂ injection by oil and gas companies.

RESULTS

The results support hypotheses 1 and 2: greater regulatory risk from the number of congressional climate change hearings had a positive impact on the adoption of technologies that mitigate climate change; this effect increased for companies that had greater liquid petroleum reserves in the U.S. territories. For every five hearings on climate change that occurred in the year before, an EOR project would use CO₂ injection. A robustness test at the EOR project level also supports hypothesis 1. The findings show that controlling for the nature of the oil wells, higher regulatory risk led to greater adoption of CO₂ injection technologies. The results also support hypotheses 3 and 5: for every four protests against a firm, a firm affiliated with an additional climate change sequestration association; this effect was enhanced under greater regulatory risk from congressional hearings. The results also support hypotheses 4 and 6: about every three protests against a firm resulted in a firm issuing an additional press release touting the climate change benefits of CO₂ EOR technologies.

DISCUSSION

Our analysis in the context of U.S. oil and gas producers provides strong support for our argument that collective activists can influence organizations by creating risk in the early stages of the policymaking process and damaging organizational reputations through protest. This study contributes to the literature at the intersection of social movements and organizations by providing an alternative public politics mechanism by which activists can influence organizations. By examining the influence of the early stages of the policymaking process on organizations, we not only build on a stronger scholarly consensus regarding the impact movements have on the policy process (Olzak & Soule, 2009), but also avoid the pitfalls of potential unobserved heterogeneity in explaining social movement impacts on organizations.

This study also enhances our understanding organizational responses to simultaneous pressures of public and private politics. The literature on organizational responses to social movements tends to view public and private politics separately; few studies examine both and those that do find the same outcome (Hiatt et al., 2009; Reid & Toffel, 2009). In contrast, our findings indicate that public and private politics can produce a differential impact. In response to private politics, we find that social movements' reputation tarnishing tactics only impact external image management and framing actions. By damaging their reputation and instilling skepticism and doubt in the minds of policymakers and other important actors as to the veracity of firms' claims and motivations, protests moderated firms' propensity to seek affiliation with experts and promote their practices as solutions to movement demands. Yet, protests had little effect on internal organizational actions and did not directly lead to EOR CO₂ investments.

REFERENCES AVAILABLE FROM THE AUTHORS