

# Policy Diffusion: The Issue-Definition Stage<sup>\*</sup>

Fabrizio Gilardi<sup>†</sup>

Charles R. Shipan<sup>‡</sup>

Bruno Wueest<sup>§</sup>

February 24, 2020

Forthcoming, *American Journal of Political Science*

## Abstract

We put forward a new approach to studying issue definition within the context of policy diffusion. Most studies of policy diffusion—which is the process by which policymaking in one government affects policymaking in other governments—have focused on policy adoptions. We shift the focus to an important but neglected aspect of this process: the issue-definition stage. We use topic models to estimate how policies are framed during this stage and how these frames are predicted by prior policy adoptions. Focusing on smoking restriction in U.S. states, our analysis draws upon an original dataset of over 52,000 paragraphs from newspapers covering 49 states between 1996 and 2013. We find that frames regarding the policy’s concrete implications are predicted by prior adoptions in other states, while frames regarding its normative justifications are not. Our approach and findings open the way for a new perspective to studying policy diffusion in many different areas.

**Verification Materials:** The data and materials required to verify the computational reproducibility of the results, procedures and analyses in this article are available on the American Journal of Political Science Dataverse within the Harvard Dataverse Network, at <https://doi.org/10.7910/DVN/QEMNP1>.

---

<sup>\*</sup>We thank Katrin Affolter, Nina Bader, Nina Buddeke, Sarah Däscher, Zander Furnas, Jeremy Gelman, Andrea Häuptli, Geoff Lorenz, Sabrina Lüthi, Adriano Meyer, Blake Miller, Christian Müller, and Thomas Willi for excellent research assistance, Klaus Rotherhäusler for technical assistance, Fridolin Linder for the evaluation of topic models and extrapolation of the diffusion network, and Jared Cory, James Cross, Marty Finnemore, Julian Garritzmman, Tom Ginsburg, Jude Hays, Daniel Kübler, Maël Kubli, Michael Lerner, Katerina Linos, Martino Maggetti, Paasha Mahdavi, Dan Mallinson, Slava Mikhaylov, Ioannis Papadopoulos, Molly Roberts, Fritz Sager, Gijs Schumacher, Matia Vannoni, Craig Volden, Fabio Wasserfallen, Yuri Zhukov, and seminar participants at UC Berkeley, University College London, the University of Cologne, the University of Konstanz, the Institut Barcelona d’Estudis Internacionals (IBEI), the University of Bern, the University of Lausanne, the University of Milan, the University of St. Gallen, the University of Strathclyde, and the University of Zurich for helpful comments. The financial support of the Swiss National Science Foundation (grant nr. 100017\_150071/1) is gratefully acknowledged.

<sup>†</sup>Department of Political Science, University of Zurich (<https://fabriziogilardi.org/>).

<sup>‡</sup>Department of Political Science, University of Michigan ([cshipan@umich.edu](mailto:cshipan@umich.edu)).

<sup>§</sup>Forschungsstelle sotomo, Zurich (<http://www.bruno-wueest.ch/>).

# 1 Introduction

When states or nations adopt new policies, their decision to adopt can be influenced not only by internal factors, but also by external factors, a process often referred to as *policy diffusion*. However, if policies do diffuse, they would not spread directly from adoption in one place to adoption in another, as most studies implicitly suggest. Rather, the path would flow from adoption in one place to the *beginning* of the policy process—the issue-definition stage—in another. After all, policymaking proceeds in several stages, starting with the identification and definition of an issue, and then only later (potentially) culminating in an adoption.

In this paper we examine whether and how prior adoptions predict the way an issue is defined, or framed, in other states.<sup>1</sup> Learning about this connection is crucial to a deeper understanding of policy diffusion, as policy ideas can spread from one government to another even if this diffusion does not result in an adoption. Adoptions are rare, whereas consideration of new policies occurs frequently; and issues can be defined in a variety of ways. To this end, in our analysis we treat issue definition as an outcome and examine whether and how previous policy adoptions predict how an issue is later defined.<sup>2</sup>

We use structural topic models (Roberts, Stewart and Airoldi, 2016) to estimate how policies are defined. Applying this technique to an original dataset of 52,000 newspaper paragraphs about anti-smoking laws in the US states reveals how this issue has been defined and how this framing has evolved. Based on this approach, we analyze whether the prevalence of these issue definitions is predicted by earlier policy adoptions.

Our theoretical and empirical analysis proceeds in two steps. First, controlling for many other relevant factors, we find that some frames used to describe smoking restrictions in a given state are predicted by the prevalence of policy adoptions in other relevant states. In analyzing this relation-

---

<sup>1</sup>We use the terms *issue definition* and *policy framing* interchangeably.

<sup>2</sup>In other words, we analyze policy-to-frame diffusion, not frame-to-frame diffusion. We elaborate on this point in the conclusion.

ship, we draw upon theoretical studies regarding the mechanisms of diffusion to understand why some issue definitions are subject to diffusion, while others are not (Simmons, Dobbin and Garrett, 2006; Braun and Gilardi, 2006; Shipan and Volden, 2008). In particular, we examine expectations related to two mechanisms, learning and emulation. We find that issue definitions are predicted by prior adoptions in topics where learning can occur, that is, in topics that refer to concrete, observable aspects of the policy. In contrast, when we examine the mechanism of emulation, we find that the most prominent normative frame—individual rights—is not predicted by prior adoptions.

Second, after demonstrating the connection between issue definition and prior adoptions, including the role of diffusion mechanisms, we explore whether individual definitions occur in combination with each other. Our initial analysis considers individual topics, as these constitute “the smallest units of framing” (Baumgartner, De Boef and Boydston, 2008, 107). But in addition to allowing us to identify simple frames, individual topics also can serve as building blocks, with topics combining to create more complex definitions. Our approach allows us to determine which topics occur together, giving us insight into how and when complex frames occur. The results show that the complexity of definitions increases as the policy becomes more widespread.

Our analysis produces several notable contributions. First, we show why and how studies of policy diffusion should take the issue-definition stage into account. Second, we demonstrate that diffusion is related to the way smoking bans are framed in areas in which information on the policy’s concrete implications emerges from earlier adoptions in other states, whereas normative justifications are less susceptible to change following policy diffusion. Third, we show how the focus on issue definition broadens the ability to study diffusion. Adoptions are relatively infrequent events, with not all policymaking efforts resulting in new policies, or even in concrete policy proposals. That is, adoptions either happen or do not happen, and can be rare. Consideration of new policies, on the other hand, occurs frequently; and issues can be defined in a variety of ways. Thus, attention to the link between prior adoptions and the ways in which issues are defined and framed in other states provides scholars with more leverage to study policy diffusion.

## 2 Theoretical Background

### 2.1 Policy Diffusion and Issue Definition

We situate our study directly within the literature on diffusion. Most studies of diffusion have focused on policy adoptions as both an independent variable and a dependent variable—that is, whether earlier policy adoptions influence the likelihood of later policy adoptions (e.g., [Berry and Berry, 1990](#); [Boehmke and Witmer, 2004](#)). Yet such an approach can lead to pro-innovation bias, which is a tendency to focus on the adoption of innovations to the exclusion of other potentially significant features of diffusion and policymaking, thereby depriving us of a broader understanding of these processes ([Rogers, 2003](#); [Karch et al., 2016](#)). We address a specific form of this bias: although it is well-recognized that policies pass through several stages before reaching the adoption stage, few diffusion studies have considered the relationship between prior adoptions and these earlier stages ([Gilardi and Wasserfallen, 2019](#)).<sup>3</sup>

Policies advance through a series of stages, including several stages that necessarily occur prior to adoption (e.g., [Patton, Sawicki and Clark, 2015](#)). At the start of the policymaking process—before policy alternatives are placed on the agenda, before policy issues are formulated, before adoption can take place—issues need to be identified and defined. As [Elder and Cobb \(1984, 115\)](#) observed, because “policy problems are not a priori givens but rather are matters of definition [...] what is at issue in the agenda-building process is not just which problems will be considered but how those problems will be defined.” Hence, issue definition is a logical starting point for the policymaking process; and if diffusion does occur, we should expect to see a connection between prior adoptions and how issues are later defined.

Although there are countless studies of issue definition, from the standpoint of diffusion Boushey’s (2016) innovative investigation of the adoption of criminal justice policies is the closest to ours, in

---

<sup>3</sup>[Karch \(2007\)](#) focuses on agenda setting and information generation, [Pacheco \(2012\)](#) on public opinion, [Pacheco and Boushey \(2014\)](#) on the political agenda. Other studies focus on later stages, such as implementation ([Nicholson-Crotty and Carley, 2016](#)) and post-adoption modifications ([Karch and Cravens, 2014](#)).

that he examines the importance of issue definition within a policy diffusion framework. However, our study and his have opposite explanatory concerns: he looks at how the definition (more specifically the social construction) of an issue affects its diffusion, whereas we focus on how diffusion can produce different issue definitions over time and across governments. Thus, our study and his are complementary, with Boushey examining how frames can lead to adoptions, while we investigate how adoptions can predict frames.

## 2.2 Issue Definition and Policy Frames

*Policy frames* can be defined as “the presentation or discussion of an issue from a particular viewpoint to the exclusion of alternate viewpoints” (Baumgartner, De Boef and Boydston, 2008, 106). In other words, these frames or *issue definitions* tell us how a policy problem is perceived or understood at any given time (Baumgartner and Jones, 1993). Because policies are usually multidimensional, it is neither automatic nor obvious that a policy will be defined in a particular way, or that this frame will remain constant over time. Instead, we argue that these frames can be predicted by earlier actions taken by other states.

Why should we care about how a policy is framed or defined? To begin with, by emphasizing some aspects of a policy problem and not others, policy frames “defin[e] the range of relevant problems to be addressed and [provide] the fundamental categories that shape decision making” (Steensland, 2008, 2). Hence, how a policy is defined at the start of the process can affect whether and how it will be addressed. A debate over health care, for example, is likely to lead to different outcomes if this policy is defined primarily as a matter of limiting government control over personal autonomy than if it is framed as a problem of lack of access to quality health care. Furthermore, these frames can change over time, with one frame being dominant at one time (and in one place) and other frames predominating later. When frames change over time, they can be understood as a “storyline or unfolding narrative about an issue” (Gamson et al., 1992, 385).

These definitions and changing narratives can have important implications and downstream

effects. Changes in issue definitions and frames can, for example, lead to shifts in the agenda (Kingdon, 1984). Issue definition also can affect how policy alternatives are designed during the formulation stage of the policy process (Wildavsky, 1987). How an issue is defined can influence policy outcomes, as Baumgartner, De Boef, and Boydstun (2008) demonstrated by showing that changes over time in the framing of the death penalty produced shifts in both public opinion and policy outcomes (measured by the frequency of death sentences). More generally, changes in issue definition can lead to the punctuation of policy equilibria (Baumgartner and Jones, 1993). Overall, the effect of issue definition on later stages in the policymaking process, including adoption, is “nearly axiomatic” within the policymaking literature (Boushey, 2016, 200).<sup>4</sup>

As we will discuss in Section 3.3, our approach identifies frames empirically using topic models, which means that we consider the topics uncovered by these models as an operationalization of policy frames. We follow DiMaggio, Nag and Blei (2013, 578, 593), who convincingly argue that topic models are an ideal tool for identifying frames in texts: “[m]any topics may be viewed as frames...and employed accordingly....[T]opic modeling has some decisive advantages for rendering operational the idea of ‘frame.’” Such topics can be used individually to show simple frames, or can be combined to show larger and more complex frames (Baumgartner, De Boef and Boydstun, 2008). From the analyst’s perspective, “[i]n specifying issue-frames, one can aggregate or disaggregate subframes” (Gamson et al., 1992, 385). Our analysis does both.

In the next section, our theoretical analysis outlines the logic for why a diffusion process might link earlier adoptions and later frames, considering both individual frames (or subframes) and more complex frames. First, we focus on individual frames and elaborate predictions about the relationship between prior adoptions and these frames. Second, because individual frames form building blocks from which more complex frames might be constructed, we then turn our attention to the potential for connections across them.

---

<sup>4</sup>Other notable studies of framing examine immigration (Haynes, Merolla and Ramakrishnan, 2016), agriculture (Bosso, 2017), and tobacco policies (e.g., Menashe and Siegel, 1998).

## 2.3 Theoretical Expectations

We argue that the diffusion process might occur between earlier adoptions and later frames by building on the logic scholars have used to explain adoption-to-adoption diffusion. If a state has not yet adopted a policy, political actors in that state will look to see what other states have done. They will observe which states have adopted policies and which have not. They will note which aspects or dimensions of policies have been emphasized in prior laws. They will discern how the politics played out in these earlier states—for example, which groups were satisfied, which were not; whether there was public support; and so on. Moreover, they will perceive which approaches these other states have taken, whether these approaches were successful, and whether these approaches would be appropriate for their own states. In other words, they will observe the politics and policy implications surrounding earlier adoptions. They can then use this information to try to define the issue in a specific way in their own state, since, as we have established, these definitions have implications for later stages of the policy process, they are malleable, and they can change over time.

Of course, it is possible—and a common assumption in most of the diffusion literature—that not all other states will matter equally. That is, when considering how a policy is framed in a state that is newly considering a policy, prior adoptions in one set of states might affect this framing, while prior adoptions in another set of states might not. While there are multiple ways to capture the influence of other states, in our empirical analysis we will focus on one way, utilizing [Desmarais, Harden and Boehmke \(2015\)](#) identification of a state's diffusion network, but we will also report results based on using other sets of states. For now, we remain agnostic about which set of states will matter, asserting more generally that policy adoptions in other relevant states can influence issue definition. Our first expectation highlights this relationship:

1. *Diffusion*: Prior adoptions by other relevant states predict the prevalence of policy frames within a state.

This first expectation, although broad, is crucial, as it allows an initial determination of whether

the posited connection between earlier adoptions and later issue definitions exists. Establishing this connection, regardless of whether the relationship is positive or negative, would provide a new way of thinking about diffusion, for the reasons discussed earlier. We also can then build upon it by delving more deeply into the question of why diffusion from adoptions to definitions might occur. To do so we turn to a central theoretical concept within the study of diffusion: that there are several key mechanisms that facilitate diffusion (Simmons, Dobbin and Garrett, 2006; Braun and Gilardi, 2006; Shipan and Volden, 2008). Briefly, scholars have identified four main mechanisms that explain how policies diffuse: *learning* means that policymakers pay attention to the consequences of policies in other units; *competition* highlights that policymakers adjust their policies to those of other units aiming to attract the same resources; *emulation* (sometimes called *imitation*) focuses on the socially-constructed aspects of policies, whereby their legitimacy, and therefore the likelihood of adoption, increases with their spread; and *coercion* emphasizes various forms of top-down influences, such as conditionality procedures set by international organizations.

Here we focus on two of these mechanisms: learning and emulation. Much of our earlier discussion about what political actors would observe from policy adoptions in earlier states can be interpreted as learning (Volden, 2006; Gilardi, 2010). They might, for example, learn about the politics of how a policy played out in other states (e.g., which groups were happy with the adoptions, whether public reaction was positive, whether the issue affected electoral outcomes, etc.). And they might also learn about policy implications, such as whether the policy worked, who it benefited, and more.

If the connection between earlier adoptions and later issue definitions is based on learning about the practical consequences of adoption, then we would expect to see specific changes in how issues are defined over time. In other words, experiences can shape frames, causing these frames to either increase or decrease in importance. In particular, there are several dimensions of anti-smoking policies where learning about consequences is likely to take place—most notably, those that are practical or concrete enough for the law’s consequences to be observed with relative ease. The ef-

fects of these laws on bars and restaurants are cases in point: one can fairly easily assess evidence on whether these businesses struggle or thrive in the aftermath of smoking bans. More specifically, in the aftermath of the adoption of restrictions on smoking in restaurants and bars, there was little evidence of overall economic harm to these industries. To the extent that later states learned from the experiences of these earlier states, we would expect these particular frames to recede in importance. Health is another aspect that is potentially linked to learning, although not unambiguously. On the one hand, policymakers may observe aggregate health outcomes in states that have adopted smoking bans and update their beliefs on the usefulness and effectiveness of this policy. On the other hand, much of this learning occurred prior to the period we examine, via landmark reports about the negative health consequences of smoking and secondhand smoke, so new adoptions arguably had a limited ability to contribute new knowledge about the health consequences of smoking.

In general, then, if states learn from prior adoptions, we would expect these particular topics or frames to be related to earlier adoptions, as the frequency of the topic will change based on the learning that occurs. Political actors will learn about the consequences of adoptions, and this knowledge will be reflected by the frequency of a topic changing as a result of earlier adoptions. We state this expectation as follows:

2. *Learning*: Prior adoptions by other relevant states predict the prevalence of policy frames that are based on practical, empirically verifiable consequences.

States also can emulate actions taken by other states. In a diffusion context, emulation occurs when one state follows the lead of an earlier state because its action is normatively appealing (Simmons, Dobbin and Garrett, 2006; Braun and Gilardi, 2006). This normative appeal in turn stems from socially-constructed aspects of policies—in particular, whether these policies are viewed as being appropriate, if they have broad support, and whether their adoption confers legitimacy upon the adopter (Walker, 1969; Meyer and Rowan, 1977). This stands in contrast to the learning that can occur about empirically observable consequences of policies. Of central importance is the ar-

gument, developed by Finnemore and Sikkink (1998), that when a normatively-appealing idea or frame becomes common and widely accepted, it becomes internalized by political actors. When that happens, this idea becomes progressively taken for granted, until it is “no longer a matter of broad public debate” (Finnemore and Sikkink, 1998, 895). Consequently, as more states adopt policies, the frame should fade from view and be invoked less frequently.

One potential anti-smoking frame stands out as having a strong normative component: freedom, or individual rights. There is little potential for learning about this topic. States do not learn about individual rights from earlier antismoking laws in the same way they can observe the consequences of such laws for bars and restaurants. On the contrary, this frame represents an aspect of the policy that has become widely accepted, internalized, and taken for granted by policymakers. Polls revealed that a very high proportion of the public consistently believes that smoking should remain legal, implying freedom *to* smoke, while also supporting smoking restrictions in public places, implying freedom *from* smoke.<sup>5</sup> Because these views are now taken for granted, with the public learning little from prior adoptions about the right to smoke or to be protected from smoke, debate will increasingly take place over other aspects of the policy.<sup>6</sup>

A frame with a strong normative component has little potential for learning. We thus expect the frequency of a normative frame to decrease with the incidence of smoking bans, as other issues rise to the fore, leading to our third expectation:

3. *Emulation*: There is a negative correlation between policy adoption by other relevant states and the prevalence of frames based on normative arguments.

So far we have concentrated on individual frames—appropriately so, since a necessary step to-

---

<sup>5</sup><https://news.gallup.com/poll/237767/one-four-americans-support-total-smoking-ban.aspx>.

<sup>6</sup>To some extent, this reasoning might hold also for another aspect, health. As argued earlier, beliefs regarding the health consequences of smoking, and of smoking bans, emerged in a prior period through a growing scientific consensus. These beliefs are strong and widespread, with polls since the 1970s revealing that more than 90 percent of Americans view smoking as having harmful effects on health (<https://news.gallup.com/poll/3553/nine-ten-americans-view-smoking-harmful.aspx>). At the same time, as discussed earlier, lawmakers might learn about health consequences that follow from adoptions. Overall, we remain agnostic regarding the status of the health frame, and refrain from associating it unambiguously with either the learning or emulation mechanism.

ward understanding the links between prior adoptions and frames, as well as the mechanisms undergirding these links, requires first a clear assessment of individual frames. As stated earlier, we view individual topics as building blocks that can stand on their own. However, it is also possible—even likely—that these simple frames can combine to create more complex frames. Indeed, as discussed in Section 2.2, prior theoretical work maintains that individual frames can be aggregated (e.g., [Gamson et al., 1992](#)). Hence, a general expectation we explore empirically is that some individual frames will be correlated, with some occurring in conjunction with others to form more complex frames. At this stage, without having conducted the analysis that will reveal which frames exist, we obviously cannot specify which frames will be correlated with which other frames. But we expect that at least some frames will occur together, and that their co-occurrence may be related to adoptions in other states. We state this expectation in general terms:

4. *Frame Correlations*: Individual frames will be correlated with each other, combining to form more complex frames, and prior adoptions will predict these correlations.

## 3 Methodology

### 3.1 Case Selection

Our analysis of policy frames as a part of the diffusion process concentrates on the adoption of antismoking policies in US states. US states historically have had considerable autonomy in the area of public health, and smoking restrictions are no exception. Although smoking-related issues are often discussed by politicians at the national level ([McCann, Shipan and Volden, 2015](#)), few laws have been passed at this level in the US; rather, the vast majority of policymaking has taken place in the states. Thus, the issue of anti-smoking laws at the state level provides an excellent forum for examining diffusion and issue definition.

Our choice of policy area is also motivated by several other considerations. First, several stud-

ies (Studlar, 1999; Shipan and Volden, 2006, 2008; Pacheco, 2012), along with abundant anecdotal evidence, indicate that anti-smoking adoptions have exhibited a diffusion process. This allows us to concentrate on the nature of the process—in particular, the ways in which this issue has been defined—rather than the mere existence of the diffusion of adoptions. Second, smoking bans have been adopted in a convenient time frame—roughly a fifteen-year period—that is long enough to detect variation and to supply sufficient information, but short enough to be practically manageable. Third, there was significant uncertainty about the potential consequences of the policies along several dimensions, including economic consequences, popular support, interest group support, implementation concerns, and so on (Jacobson, Wasserman and Anderson, 1997). Finally, this uncertainty over consequences means that the debate over adoption can be framed in multiple ways. Although our case is specific, our results offer an excellent basis for research in other areas. We elaborate on this point in the conclusion.

## 3.2 Corpus

We discuss the construction of the corpus in detail in Appendix A. Briefly, we retrieved and processed articles published in 49 newspapers covering 49 US states between 1996 (two years before California adopted the first statewide smoking ban) and 2013.<sup>7</sup> We retrieved newspaper texts using a simple, broad keyword search from different database providers. To remove irrelevant paragraphs, we conducted a supervised text classification based on crowd-annotation (Benoit et al., 2016) and a machine-learning classifier. The final corpus consists of 52,675 paragraphs.

---

<sup>7</sup>One question that arises is whether the media coverage we examine reflects how policies are framed, or whether it influences the frames. On this question we are agnostic. Regardless of whether this coverage reflects or influences frames, media coverage can be used as an accurate source for identifying the ways in which smoking bans are framed and, more generally, as an indicator of how they are discussed (Baumgartner, De Boef and Boydstun, 2008).

### 3.3 Structural Topic Model

We identify policy frames inductively with a structural topic model (STM) (Roberts et al., 2014; Roberts, Stewart and Airoldi, 2016). Unlike other types of topic models (Blei, Ng and Jordan, 2003), the STM allows the inclusion of covariates. This makes it possible to assess relationships among variables in a regression-like framework, that is, to uncover covariation between topic prevalence and variables of interest. Concretely, in our study, the STM’s ability to include covariates means that we can directly examine our expectation that topic prevalence within a state—which is our measure of issue definition—is linked to prior policy adoptions by other states. Moreover, the STM allows us to control for other factors that might be related to topic prevalence, including time trends.<sup>8</sup>

We estimate our topic models using the `stm` package in R (Roberts, Stewart and Tingley, 2014). We evaluated 47 models varying the number of topics from 3 to 50 and found that models with relatively few topics performed better (see Appendix C.1). After a qualitative evaluation of the most-probable words and documents of the models’ topics in this range, we selected the 12-topic model as the most useful for our analysis. The results of models assuming 3 to 13 topics show that the models identify the same underlying topics, although obviously with different degrees of granularity.

The STM also allows us to retrieve estimates of correlations between topics. In other words, it lets us see how the prevalence of individual topics co-varies, allowing us to assess our expectations about frame correlations. We will focus only on positive correlations, for several reasons. First, in mixed-membership models like STM the topics inherently crowd each other out, since their prevalence must sum up to 1. Second, our strategy to select the optimal number of topics pushes topic correlations in the negative direction because we wanted topics to pick up words that separate topics neatly (see Appendix C.1). Consequently, most correlations will be negative and those correlations that are positive will not be very strong. However, precisely because our approach is biased against positive correlations, those we do find can be interpreted as substantial.

---

<sup>8</sup>We discuss the covariates that we include in our analysis in Section 3.4.

### 3.4 Covariates

The most important covariate in our analysis measures *prior policy adoptions by other relevant states*. The construction of this variable mirrors that of a spatial lag, which is a weighted average of the policies of other states (Plümper and Neumayer, 2016) and is the key variable of interest in most diffusion studies. To construct this spatial lag, we first need to know when various types of smoking bans were enacted in each state. Following Shipan and Volden (2006), we purchased these data from MayaTech’s Center for Health Policy and Legislative Analysis. We consider bans in seven areas: restaurants, bars, government worksites, private worksites, hotels, malls, and indoor arenas (see Appendix B).

As noted earlier, not all states may matter equally, in terms of the relationship between prior adoptions and issue definitions. There are a variety of ways that we could create a connectivity matrix containing information about which states are likely to influence other states. For example, the literature on diffusion traditionally has relied on geographic proximity (Maggetti and Gilardi, 2016). This limits the focus of the analysis to a narrow set of states—namely, those that share a border with the state in question. At the other extreme, we could include all other states in our connectivity matrix.

The approach that we use relies on a recent innovation by Desmarais, Harden and Boehmke (2015), which identifies a latent, dynamic policy diffusion network for US states. That is, for any given state, it identifies the other states that have shown influence on the state in question across a large range of policy areas. Concretely, this approach identifies the likelihood that state  $i$  is identified as a policy source for state  $j$  based on three pieces of information: the frequency with which  $i$  adopts a policy before  $j$ ; the time lag between  $i$ ’s and  $j$ ’s adoptions; and the accuracy with which a policy adoption by  $i$  predicts an adoption by  $j$ . Applying a latent network inference algorithm to the adoption of 187 policies, these authors infer a state-to-state policy diffusion network for 1960 through 2009. That is, for each pair of states, they estimate whether policies diffuse from one state to the other, and in which direction. The result is a directed dyadic dataset that can be used to construct a

binary connectivity matrix, similar to a traditional geographic contiguity matrix, but reflecting the latent diffusion network more accurately than geography.<sup>9</sup> Our approach thus allows for a broader set of potentially relevant states than would an approach using only geographic neighbors, but a more focused set than one that includes all other states. We hasten to add, however, that we have run our analysis using all of these approaches—the latent diffusion network, neighboring states, and all states—and find similar support for our expectations across these different operationalizations (see Appendix C.2).

The analysis includes several other covariates that we use to control for relevant factors that might affect how smoking bans are framed: (1) a monthly trend variable, to control for the baseline time trend of topics’ proportions; (2) newspaper IDs, to identify the states in which newspapers are based; (3) newspapers’ ideological “slant” (Gentzkow and Shapiro, 2010), since a newspaper’s ideological leaning might affect its coverage of smoking bans; (4) the percentage of smokers in the state where the newspaper is based, which might be related to the popularity of smoking bans; (5) whether a newspaper is based in a tobacco-producing state (for the same reason); (6) whether Democrats or Republicans form a unified government in a state, because the two parties tend to have different views about smoking restrictions; (7) the presence of smoking bans in a state; (8) the number of months before and after the enactment of smoking bans, since the framing of smoking bans is likely to change before and after their introduction; and (9) the sentiment of a given paragraph, which we measured with the same approach we used for the identification of relevant paragraphs (see Appendices A.3 and A.4).

---

<sup>9</sup>Desmarais, Harden and Boehmke (2015) show that diffusion occurs most commonly across states that are *not* contiguous. Since their diffusion network data are available only until 2009, we predicted the remaining years (2010–2013) using temporal exponential-family random graph models, whose forecasts were trained and evaluated with data for the fourteen years available in their paper. See Appendix D.

## 4 Results

### 4.1 Topics and Time Trends

Figure 1 shows how topic prevalence is distributed over time across all states; a detailed validation is discussed in Appendix C.3. We determined the label for each topic based on the top fifty words for each topic (see Appendix C.4), as well as a reading of the most relevant paragraphs for each topic (see Appendix C.6). The model does an excellent job of identifying relevant topics that are clearly connected with smoking bans and are consistent with what public-health experts found by hand-coding documents (e.g., Menashe and Siegel, 1998).

We group the twelve topics into seven categories, based on both how they correlate with one another (as discussed in sections 3.3 and 4.2) and our theoretical arguments. The *Normative* category consists of *Freedom*. Figure 1 shows that *Freedom* is on average the most prevalent topic, with little change over time after 2007. *Health*, the second category and fourth most-prevalent topic, also is relatively stable over time compared to other topics. Empirically, the *Freedom* and *Health* topics clearly co-occur, as we will show in Section 4.2. However, for the reasons discussed in Section 2.3, we do not group them in the same category.

The *Regulations* category includes *Bars and restaurants*, *Local legislation*, *Rules*, and *Enforcement*.<sup>10</sup> These topics are among the most frequent and some exhibit marked variation over time. *Interest Groups* and *Politics* consist of one topic each (*Tobacco companies* and *Electoral politics*, respectively). *Tobacco companies* is on average relatively prevalent, but peaked before 2000. *Electoral politics* is the least frequent topic, with some ups and downs. Finally, *Casino legislation* includes both *Casinos* and *State legislation*, while *Spaces* includes *Schools and universities* and *Outdoors*.

These time trends offer important context for interpreting our main results. Importantly, the time trends are controlled for when examining other variables of interest, including in particular the share of prior policy adoptions by other relevant states.

---

<sup>10</sup>We discuss the distinction between *Rules* and *Enforcement* in depth in Appendix E.

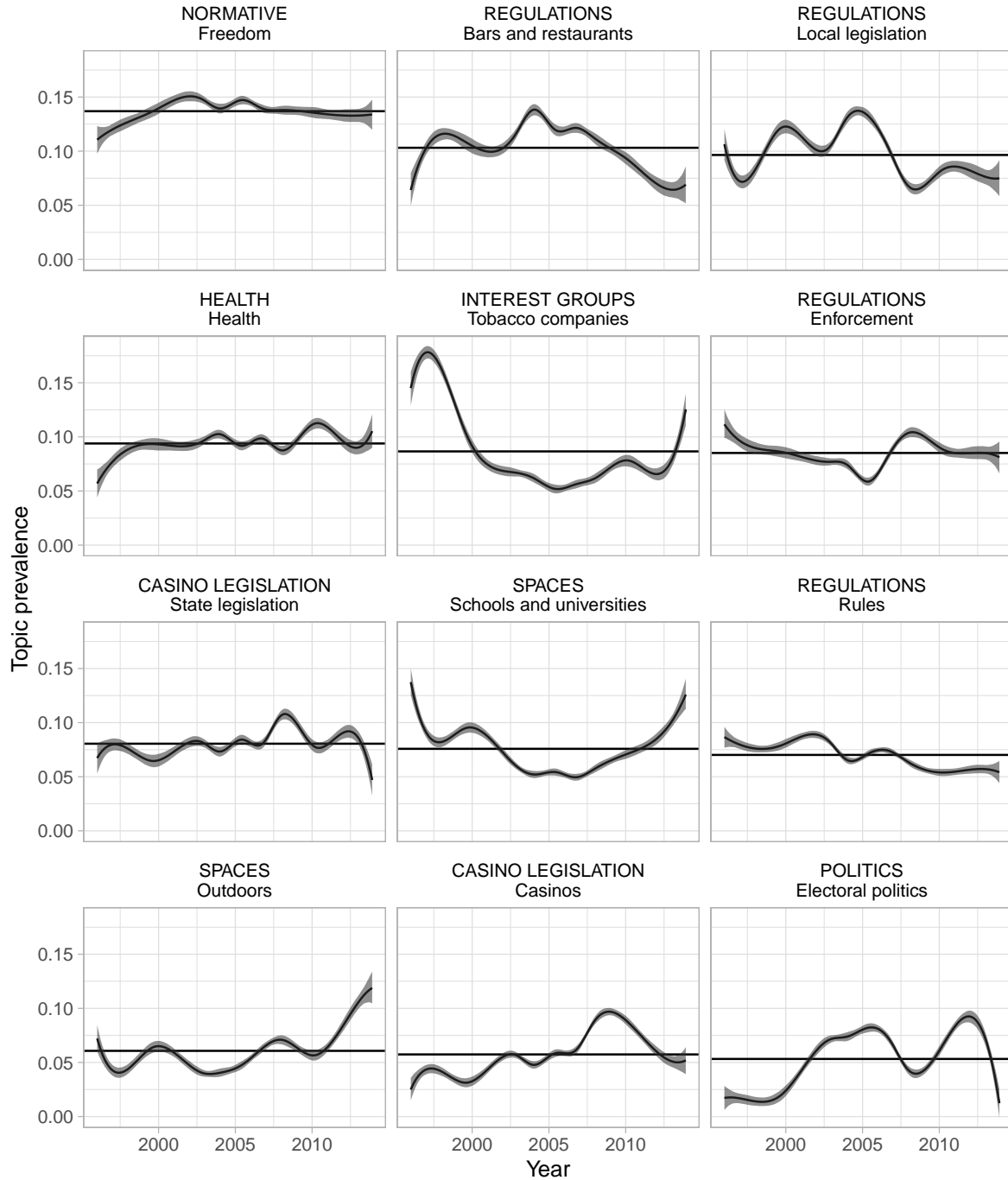


Figure 1: *Topic prevalence over time. Topics are sorted by decreasing average prevalence. Horizontal lines show average prevalence for each topic over the observation period. Topic labels are in lower case, while categories are in upper case.*

## 4.2 Assessing Our Expectations

### Diffusion

We begin with our first expectation, which is that issue definitions within a state are predicted by other states' prior adoptions of smoking bans. We can assess this expectation by plotting the prevalence of a frame against the proportion of prior adoptions by those other states, to see whether the prevalence co-varies with earlier adoptions or is unrelated to these adoptions. Again, we find similar results using neighboring states and all states (see Appendix C.2).

Figure 2 provides direct evidence that the prevalence of some topics is indeed predicted by prior policy adoptions by other states. *Rules, Bars and restaurants, Local legislation, and Tobacco companies* all show a pattern of decreasing prevalence as the proportion of adoptions increases. Meanwhile, *Enforcement, Casinos, Electoral politics, Outdoors*, and to some extent *State legislation* show the opposite effect, with these frames becoming more prevalent as more states adopt bans. Not all topics, however, vary in prevalence relative to the share of prior adoptions. In particular, *Health* and *Freedom* show no covariation with prior adoptions, a finding we return to shortly.

The plots thus provide evidence consistent with our first expectation about diffusion, showing that many, although not all, topics are predicted by levels of prior adoptions. We now turn to our second and third expectations, both of which are based on the mechanisms of diffusion.

### Learning

Our second expectation holds that there are some topics where learning can take place, where earlier claims about a policy and its effects can be empirically verified (or not), and that this will be reflected in the frequency with which a topic is raised in other states.

Several of the plots in Figure 2 provide support for these conjectures. We begin by considering topics within the Regulations category, which includes topics related to concrete aspects of smoking bans. We find that the correlation between prevalence and prior adoptions is strong—and

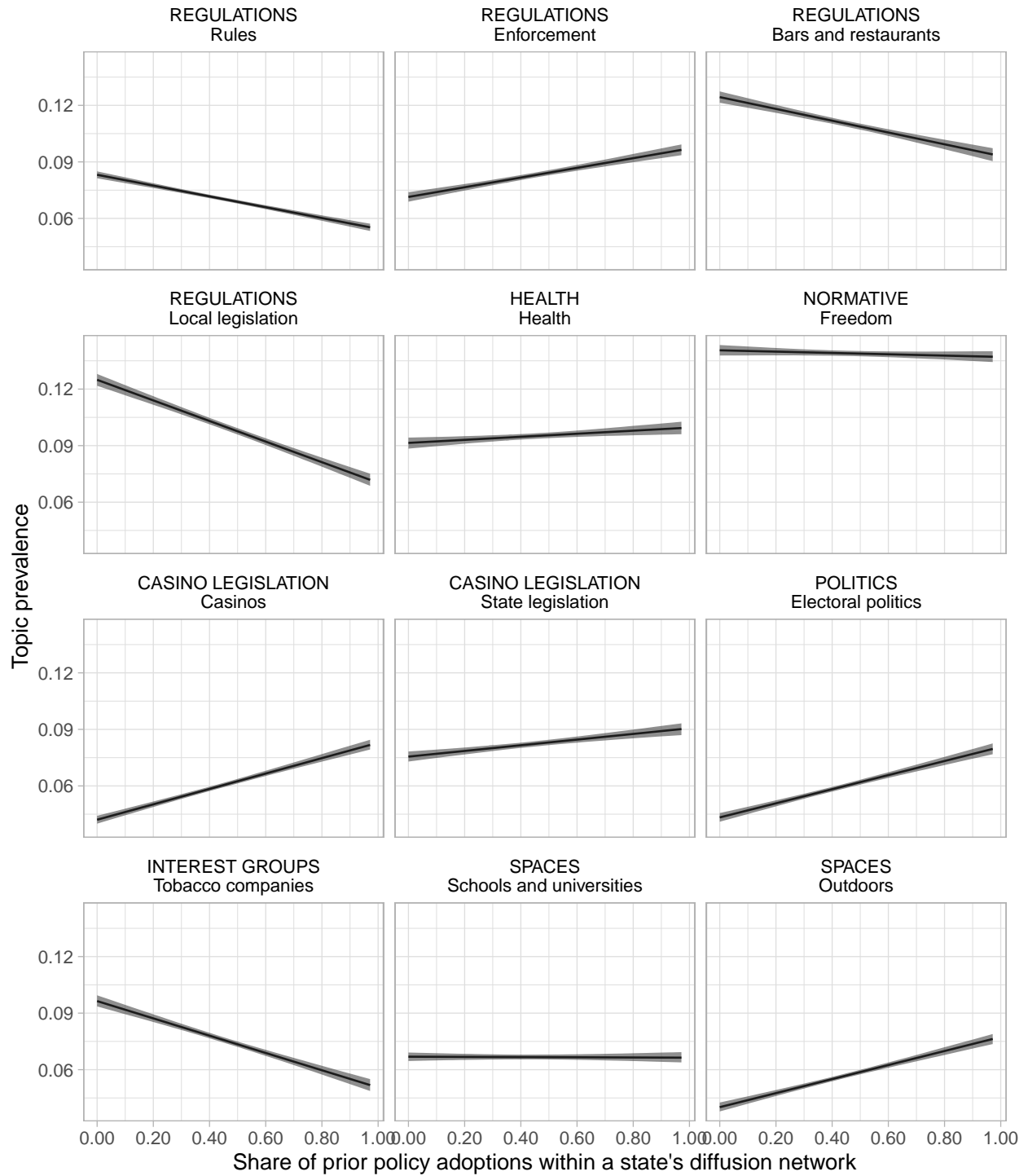


Figure 2: *Topic prevalence co-varies with the share of prior policy adoptions within a state's diffusion network. Topic labels are in lower case, while categories are in upper case.*

negative—for *Bars and restaurants*, indicating that the prevalence of this topic decreases as a higher proportion of other relevant states adopt anti-smoking laws. Opponents of smoking restrictions regularly voiced concerns about the potential harmful economic effects of such policies on bars and restaurants. The texts in Appendix C.6 illustrate how patrons were initially ambivalent (e.g., “Galen Sprague and Marchello Marchese say they don’t mind stepping outside to take a cigarette break”; “I like to sit down for a while and smoke before I eat’, said Lawson. ‘And after I eat I like to smoke.’”). The predictions of harm were not borne out, however (Warner, 2000). Consequently, this frame faded.

A negative correlation also occurs for the *Rules* topic within this category. As illustrated by the texts shown in Appendix C.6, this topic identifies the technical aspects of smoking bans, such as rules or permits for separate smoking areas, ventilation, and exemptions (e.g., “An ‘effectively smoke-free’ establishment limits smoking to separately ventilated areas”). Getting these regulations right is important, as uncertainty surrounding them may worry business owners. Figure 2 shows a negative correlation between *Rules* and prior adoptions by other relevant states, indicating that these issues are quite salient when no other state within the diffusion network has enacted smoking bans, and less so when many have. This finding suggests that the experiences of other states are used to update beliefs—in this case, what kind of regulations work best or the challenges regarding their design.

*Enforcement* is another practical aspect of smoking bans in the same category. The salience of this topic increases as more evidence from other relevant states becomes available, showing that the enforcement of smoking bans is not always unproblematic. For instance, the examples in Appendix C.6 show that some business owners filed lawsuits challenging the scope and legality of smoking bans (e.g., “Bar owner’s smoking ban suit dismissed”). The last correlation in this category, that for *Local legislation*, is also negative (e.g., “Naperville officials this week delayed voting on a proposed smoking ban”). This finding suggests that the decision-making process may shift from the local to the state level when state legislation becomes more widespread. Interestingly, *Health* is essentially

unrelated to the share of prior policy adoptions by other relevant states.

We find evidence for our learning expectation in other categories. Consider the *Casinos* category, which includes legislation introducing smoking restrictions in casinos. The specific *Casinos* topic within this category becomes more salient when many states enact smoking bans, suggesting that their experience points to negative consequences for the casino business, as illustrated by the examples in Appendix C.6 (e.g., “The industry has attributed the struggles largely to the sluggish economy and a smoking ban that went into effect in January 2008”). As more states adopt laws, and as evidence begins to amass about potential harmful consequences, learning occurs and the topic is more likely to emerge as a frame.

Next, our findings for topics in the *Politics* and *Interest groups* categories indicate that states can learn not only from policy outcomes in other states; they also can learn about political outcomes. *Electoral politics* identifies voters’ involvement in the decision-making process, and more generally the political-electoral dimension of smoking ban adoption and implementation (e.g., “Louisville Metro Council incumbent Ken Fleming is facing a strong challenge from political newcomer Neville Blakemore, who is making an issue of Fleming’s position on smoking curbs”). It becomes a much more prominent topic when other states start to pass smoking restrictions.

Figure 2 also shows that another prominent political dimension, that of the dominant interest organization in this area—*Tobacco companies*—is strongly and negatively correlated with the policies other states. That is, as more states adopt these restrictions or bans, *Tobacco companies* is less likely to emerge as a topic or frame. Given that restrictions and bans are usually adopted over the opposition of this industry, and given the growing public distrust of these companies during the period we examine, the increasing success of other states in adopting such policies means that states may no longer view tobacco companies as pivotal actors and consequently see less need to defer to them (e.g., “The company has made that point in broadcast advertisements, in fliers it has inserted in cigarette packs from 2002 to 2009, on its website and on tear-tape on cigarette packages”).

## Emulation

Our emulation expectation states that for topics that are widely shared and internalized we would expect a decrease in attention as more states adopt policies. The reason for this expected drop-off is that these aspects of a policy will become widely accepted, even taken for granted. When this happens, they will fade from public discourse.

To examine this expectation, we consider the category of *Normative*. The topic in this group, *Freedom*, is not linked to concrete aspects of smoking bans that can be verified by looking at the experiences of other states. In particular, the compatibility of smoking bans with individual freedom can potentially become taken for granted and achieve a status in which they are, to again quote [Finnemore and Sikkink \(1998, 895\)](#), “no longer a matter of broad public debate.” Therefore we expect a negative correlation between normative topics and previous adoptions by other states.

Contrary to this expectation, [Figure 2](#) shows that topics in the *Normative* group are not correlated with the policies of other states. In particular, *Freedom* is discussed with about the same frequency regardless of how many other states have enacted bans. The compatibility of smoking bans with individual rights (e.g., “Regardless of what ban supporters say, this is not about public health; it’s about controlling the lives of others,” see [Appendix C.6](#)) is highly salient in public debates on smoking bans—indeed, it is the most frequent topic (see [Figure 1](#) in the Appendix)—but its relevance does not increase or decrease, relative to other topics, when more states adopt the policy. That is, the experiences of other states do not change the frequency—again, relative to other topics—with which smoking bans are discussed in connection with individual rights, implying that although *Freedom* is an important part of the debate, it is not a crucial dimension of the *diffusion* of smoking bans.<sup>11</sup>

---

<sup>11</sup> Although we did not assign *Health* to the *Normative* category, this frame also shows little change corresponding to the number of earlier adoptions (unlike *Freedom*, it increases very slightly). The examples in [Appendix C.6](#) show texts relevant to *Health* that mention scientific studies, including those conducted in other countries, and refer to their findings as “facts,” supporting the idea that the scientific consensus has gained broad acceptance.

## Topic Correlations

We now turn to our expectation about the connections between individual topics. In examining correlations between topics, we consider both their nature and how they co-vary with the share of prior policy adoptions in other states. Figure 3 shows, in network format, how our individual topics correlate with one another. For the reasons explained in Section 3.3, we concentrate on positive correlations. The top panel of Figure 3 shows correlations computed using the whole corpus, and is the basis for the categories we have used so far. The middle panel computes correlations using the subset of texts for which the values of the spatial lag is smaller than or equal to 0.5—that is, cases in which fewer than 50% of other states have adopted the policy. Finally, the bottom panel shows the correlations when most other states have adopted the policy.

The main pattern that emerges from Figure 3 is that topics tend to be more closely linked with one another when more states adopt the policy. In other words, policy frames tend to become more complex as the policy diffuses. When few other states have adopted the policy (i.e., the middle panel), *Rules* and *Enforcement* tend to be discussed together, but not in conjunction with other topics. The same holds for *Health* and *Freedom*, suggesting that *Health* might share some features with the normative category of *Freedom*. Moreover, several topics are discussed in isolation.

However, when many states have adopted the policy, we see the emergence of a broad frame connecting many topics. The central node of this frame is *Rules*, with connections not only with *Enforcement*, but also with *Health* and *Freedom* (via *Bars and restaurants*) and *Electoral politics* (via *Local legislation*). That is, a much more complex frame emerges, combining practical, normative, and political aspects. This evidence suggests that policy diffusion is associated with policy frames taking more sides of the problem into account. Moreover, additional analysis in Appendix C.5 shows that the emergence of more complex frames goes together with a smaller number of distinct topics, suggesting that the more complex frame crowds out other frames.

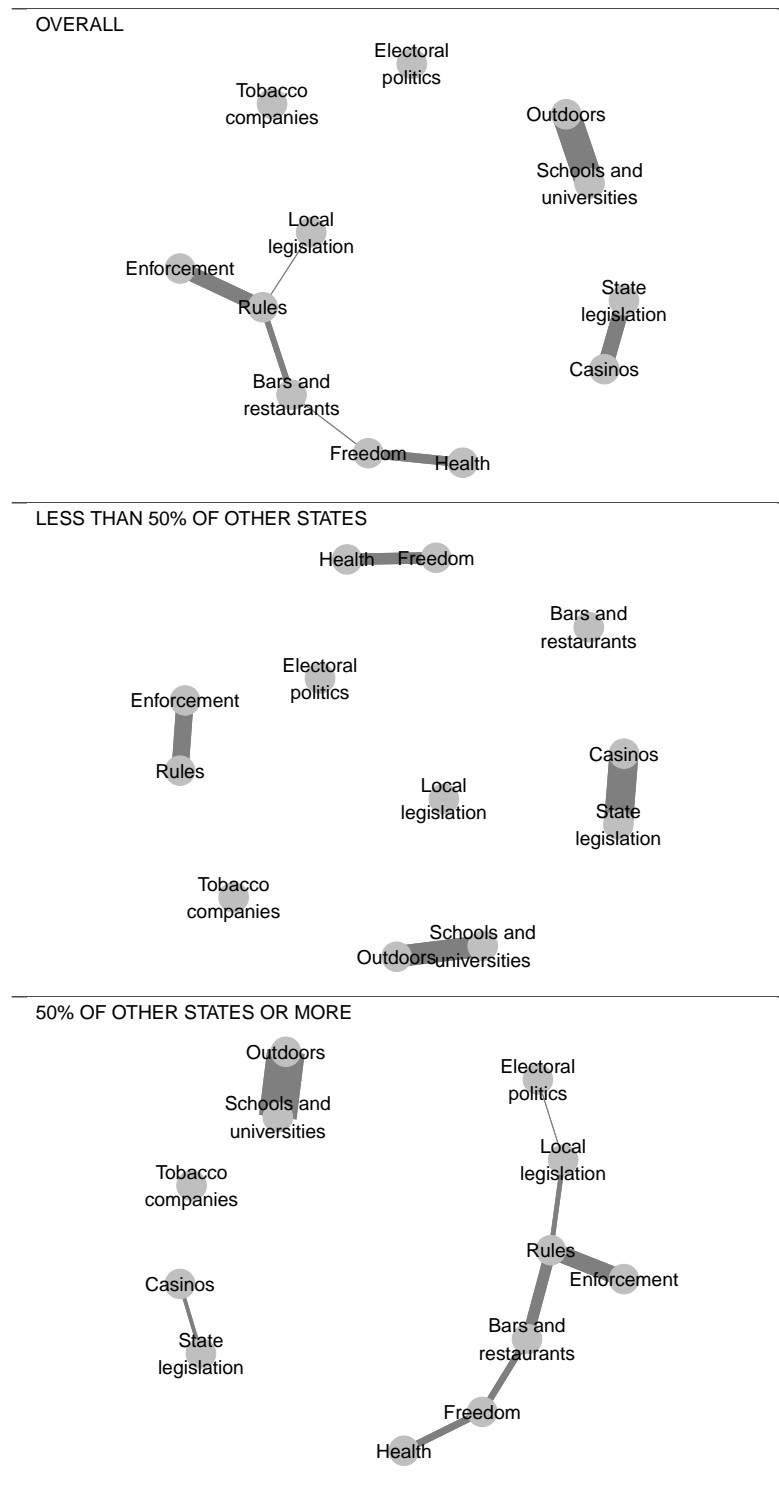


Figure 3: Topic correlations over all paragraphs (top panel) and as a function of low (center panel) or high values (bottom panel) of the share of prior policy adoptions within a state's diffusion network.

### 4.3 Summary

We conclude that the way smoking bans are defined or framed is predicted by the prevalence of the policy in other states, which supports our first expectation (*Diffusion*). As the policy becomes more widespread, some issues (e.g., the consequences of smoking bans for casinos, enforcement problems, political support) gain salience and prominence, while others (e.g., the consequences for bars and restaurants, the influence of tobacco companies, regulatory details) become less relevant. Notably, and consistent with our second expectation (*Learning*), these topics refer to the practical, observable consequences of smoking bans. On the other hand, topics that capture normative aspects of the debates over this policy area—most clearly *Freedom*—are unaffected by earlier adoptions, which goes against our third expectation (*Emulation*). Finally, the complexity of policy frames increases with diffusion. As the policy becomes more widespread, policy frames take into account more aspects of the problem, connecting previously separate topics linked to the normative, practical, and political implications of smoking bans (*Frame Correlations*).

## 5 Conclusion

Our study brings a new perspective to the study of policy diffusion by focusing on framing and issue definition. Rather than examining whether policy adoptions are a function of previous adoptions, which has been the standard approach, we instead investigate another aspect of diffusion, one that has been overlooked and for which no conventional wisdom exists. Namely, we have examined the link between prior adoptions and the way an issue is defined or framed.

Our analysis demonstrates both that issue definition is an integral part of the diffusion process and that diffusion plays a key role in issue definition. Most notably, we find that as a policy becomes more widespread, the ways an issue is defined changes, although this connection does not exist for all types of frames. Normative rationales of a policy are relatively unrelated to previous adoptions. On the other hand, more practical aspects in which learning can occur are defined differently when

most other states have adopted the policy than when few have, with some frames becoming more prevalent as adoptions become more frequent while other frames fade away as the experience of others demonstrates their irrelevance. Moreover, frames tend to become more complex as the policy spreads.

Viewed from the perspective of policy diffusion theory, our findings mean that the effects of diffusion come into evidence well before the adoption stage, or even the agenda-setting stage. Policy diffusion can affect policymaking by shaping how issues are defined—that is, by shaping the first stage of the policy process. In other words, the reach of diffusion processes, and their potential to influence policymaking activity, is even greater than currently assumed. Moreover, our findings imply that conventional results, focusing narrowly on policy adoptions, might be somewhat misleading, or potentially spurious, since diffusion operates prior to the adoption stage.

We also show that there is another benefit to focusing on stages prior to adoption. Explaining whether a policy is adopted, which has been the standard approach in diffusion studies, is certainly valuable. But for this approach to work, the policy under study must be widespread; otherwise the dataset will include too many 0s and too few 1s in the dependent variable for the analysis to be reliable or even feasible. Moreover, policies must be easily measurable and comparable. However, many important policies cannot be easily measured or compared across units; and many phenomena may not (yet) be widespread. In such cases, a conventional diffusion approach that focuses on adoptions as a dependent variable is not useful, even though a diffusion *perspective*—one showing how policymaking activities in previous and current states are related—might be highly relevant. Our approach shows how scholars can study any policy or a range of political phenomena from a diffusion angle, regardless of whether policies have been adopted. Thus, it can shed light on policy areas that, unlike antismoking laws, do not include frequent adoptions. In such areas, our findings lead us to expect that there will be a larger number of unconnected frames. Moreover, we expect that that normative frames will already be prominent, and stay so throughout the diffusion process.

Our study sets the stage for the examination of an additional set of theoretical and empirical

questions. Notably, many of these questions would not have been apparent before our analysis. For example, some studies have established that the diffusion of innovations is conditional on the strength of interest groups and the capacity of the legislature. Do such political variables condition the diffusion from adoptions to the issue definition stage?

In addition, we have examined diffusion and the issue definition stage within one particular policy area. As we have explained, smoking restrictions presents an especially good area in which to examine this topic, given the existence of multiple frames, the relatively short period in which policies were considered, and so on. Thus, we are confident that our approach and results provide a good template for how to examine other policy areas that meet these criteria, including changes to the death penalty, abortion, gun safety, same-sex marriage, and marijuana liberalization. At the same time, it will certainly be worthwhile to explore whether similar patterns exist in other policy areas. In particular, for our analysis we relied on the use of latent diffusion networks (although we emphasized that our results are robust to examining other sets of relevant states). The latent network we used was based on all policies, but it can be used to determine networks based on subsets of policies. This would allow scholars to examine a network that was created based only on related policies, or those policies that include certain sorts of frames, such as freedom.

Another question that our analysis allows scholars to consider concerns the direct link between policy frames in earlier states and those in later states. Such frame-to-frame diffusion cannot be studied within our framework, because the STM estimates the prevalence of topics and their correlations with covariates (e.g., the frequency of prior adoptions) simultaneously. Consequently, while we can include prior adoptions as covariates, we cannot include the prevalence of earlier frames in other states as a covariate in the STM, because this prevalence is unknown prior to estimating the model. A study that builds on our paper and examines the link between frames in different states would be an illuminating addition to the diffusion literature. Similarly, future studies should work to develop new ways to assess the link between sentiment and framing as a measure of issue definition. Combining topics and sentiment in a coherent outcome variable is difficult within

our methodological approach, because although we included sentiment as a covariate, measured prior to the analysis, topics are identified inductively together with their correlation with covariates. Moreover, studies building on our approach should aim to develop ways to strengthen the connection between theoretical expectations and empirical analysis to better cope with its inductive aspects. One challenge to overcome is the formulation of specific hypotheses when topics are unknown because they are yet to be identified by the model. Finally, future research should attempt to go beyond prediction to measure causal effects. It is a daunting task in this context because it requires solving simultaneously two difficult problems that the literature is just starting to address individually (but not yet in conjunction): causal inference with text data ([Egami et al., 2018](#)) and the identification of causal diffusion effects using observational data ([Egami, 2018](#)).

While acknowledging the relevance of these other questions and topics, it is worth repeating that they arise because of the work presented in this paper. Until now, there has been no investigation of the connection between prior adoptions and the beginning steps of the policy process (i.e., issue definition and policy frames) in later states. The primary value of our approach is that it provides a new, innovative way to investigate this connection. On its own, this constitutes a valuable addition to the literatures on policymaking and policy diffusion. But it also provides a foundation that other studies can build on to explore new avenues that will further enrich our understanding of diffusion and the policy process.

## References

- Baumgartner, Frank R. and Bryan D. Jones. 1993. *Agendas and Instability in American Politics*. Chicago: University of Chicago Press.
- Baumgartner, Frank R., Suzanna L. De Boef and Amber E. Boydstun. 2008. *The Decline of the Death Penalty and the Discovery of Innocence*. New York: Cambridge University Press.
- Benoit, Kenneth, Drew Conway, Benjamin E. Lauderdale, Michael Laver and Slava Mikhaylov. 2016. "Crowd-Sourced Text Analysis: Reproducible and Agile Production of Political Data." *American Political Science Review* 116(2):278–295.
- Berry, Frances Stokes and William D. Berry. 1990. "State Lottery Adoptions as Policy Innovations: An Event History Analysis." *American Political Science Review* 84(2):395–415.
- Blei, David M., Andrew Y. Ng and Michael I. Jordan. 2003. "Latent Dirichlet Allocation." *Journal of Machine Learning* 3:993–1022.
- Boehmke, Frederick J. and Richard Witmer. 2004. "Disentangling Diffusion: The Effects of Social Learning and Economic Competition on State Policy Innovation and Expansion." *Political Research Quarterly* 57(1):39–51.
- Bosso, Christopher J. 2017. *Framing the Farm Bill: Interests, Ideology, and Agricultural Act of 2014*. Lawrence, KS: University Press of Kansas.
- Boushey, Graeme. 2016. "Targeted for Diffusion? How the Use and Acceptance of Stereotypes Shape the Diffusion of Criminal Justice Policy Innovations in the American States." *American Political Science Review* 110(1):198–214.
- Braun, Dietmar and Fabrizio Gilardi. 2006. "Taking 'Galton's Problem' Seriously: Towards a Theory of Policy Diffusion." *Journal of Theoretical Politics* 18(3):298–322.

- Desmarais, Bruce A, Jeffrey J Harden and Frederick J Boehmke. 2015. "Persistent Policy Pathways: Inferring Diffusion Networks in the American States." *American Political Science Review* 109(2):392–406.
- DiMaggio, Paul, Manish Nag and David M. Blei. 2013. "Exploiting affinities between topic modeling and the sociological perspective on culture: Application to newspaper coverage of US government arts funding." *Poetics* 41(6):570–606.
- Egami, Naoki. 2018. "Identification of Causal Diffusion Effects Using Stationary Causal Directed Acyclic Graphs." Princeton University, <https://bit.ly/2QKQfER>.
- Egami, Naoki, Christian J. Fong, Justin Grimmer, Margaret E. Roberts and Brandon M. Stewart. 2018. "How to make causal inferences using texts." *arXiv:1802.02163v1* <https://arxiv.org/abs/1802.02163v1>.
- Elder, Charles D. and Rober W. Cobb. 1984. "Agenda-Building and the Politics of Aging." *Policy Studies Journal* 13(1):115–129.
- Finnemore, Martha and Kathryn Sikkink. 1998. "International Norm Dynamics and Political Change." *International Organization* 52(4):887–917.
- Gamson, William A., David Croteau, William Hoynes and Theodore Sasson. 1992. "Media Images and the Social Construction of Reality." *Annual Review of Sociology* 18(1):373–393.
- Gentzkow, Matthew and Jesse M. Shapiro. 2010. "What Drives Media Slant? Evidence from US Daily Newspapers." *Econometrica* 78(1):35–71.
- Gilardi, Fabrizio. 2010. "Who Learns from What in Policy Diffusion Processes?" *American Journal of Political Science* 54(3):650–666.
- Gilardi, Fabrizio and Fabio Wasserfallen. 2019. "The Politics of Policy Diffusion." *European Journal of Political Research* 58:1245–1256.

- Haynes, Chris, Jennifer Merolla and S. Karthick Ramakrishnan. 2016. *Framing Immigrants: News Coverage, Public Opinion, and Policy*. New York: Russell Sage Foundation.
- Jacobson, Peter D., Jeffrey Wasserman and John R. Anderson. 1997. "Historical overview of tobacco legislation and regulation." *Journal of Social Issues* 53(1):75–95.
- Karch, Andrew. 2007. *Democratic laboratories: Policy diffusion among the American states*. Ann Arbor: University of Michigan Press.
- Karch, Andrew and Matthew Cravens. 2014. "Rapid diffusion and policy reform: The adoption and modification of three strikes laws." *State Politics & Policy Quarterly* 14(4):461–491.
- Karch, Andrew, Sean C. Nicholson-Crotty, Neal D. Woods and Ann O'M. Bowman. 2016. "Policy Diffusion and the Pro-Innovation Bias." *Political Research Quarterly* 69(1):83–95.
- Kingdon, John W. 1984. *Agendas, Alternatives, and Public Policies*. New York: Longman.
- Maggetti, Martino and Fabrizio Gilardi. 2016. "Problems (and Solutions) in the Measurement of Policy Diffusion Mechanisms." *Journal of Public Policy* 36(1):87–107.
- McCann, Pamela J. Clouser, Charles R. Shipan and Craig Volden. 2015. "Top-Down Federalism: State Policy Responses to National Government Discussions." *Publius* 45(4):495–525.
- Menashe, Claudia L. and Michael Siegel. 1998. "The power of a frame: an analysis of newspaper coverage of tobacco issues-United States, 1985-1996." *Journal of Health Communication* 3(4):307–325.
- Meyer, John W. and Brian Rowan. 1977. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology* 83(2):340–363.
- Nicholson-Crotty, Sean and Sanya Carley. 2016. "Effectiveness, Implementation, and Policy Diffusion Or 'Can We Make That Work for Us?'" *State Politics & Policy Quarterly* 16(1):78–97.

- Pacheco, Julianna. 2012. "The Social Contagion Model: Exploring the Role of Public Opinion on the Diffusion of Antismoking Legislation across the American States." *Journal of Politics* 74(1):187–202.
- Pacheco, Julianna and Graeme Boushey. 2014. "Public health and agenda setting: Determinants of state attention to tobacco and vaccines." *Journal of Health Politics, Policy and Law* 39(3):565–589.
- Patton, Carl, David Sawicki and Jennifer Clark. 2015. *Basic Methods of Policy Analysis and Planning*. New York: Routledge.
- Plümper, Thomas and Eric Neumayer. 2016. "W." *Political Science Research and Methods* 4(1):175–193.
- Roberts, M. E., B. M. Stewart and D. Tingley. 2014. *stm: R Package for Structural Topic Models*. <https://cran.r-project.org/package=stm>.
- Roberts, Margaret E., Brandon M. Stewart, Dustin Tingley, Christopher Lucas, Jetson Leder-Luis, Shana Kushner Gadarian, Bethany Albertson and David G. Rand. 2014. "Structural topic models for open-ended survey responses." *American Journal of Political Science* 58:1064–1082.
- Roberts, Margaret E., Brandon M. Stewart and Edoardo M. Airolidi. 2016. "A model of text for experimentation in the social sciences." *Journal of the American Statistical Association* 111(515):988–1003.
- Rogers, Everett M. 2003. *Diffusion of Innovations*. 5th edition ed. New York: The Free Press.
- Shipan, Charles R. and Craig Volden. 2006. "Bottom-Up Federalism: The Diffusion of Antismoking Policies from U.S. Cities to States." *American Journal of Political Science* 50(4):825–843.
- Shipan, Charles R. and Craig Volden. 2008. "The Mechanisms of Policy Diffusion." *American Journal of Political Science* 52(4):840–857.

- Simmons, Beth, Frank Dobbin and Geoffrey Garrett. 2006. "Introduction: The International Diffusion of Liberalism." *International Organization* 60(4):781–810.
- Steensland, Brian. 2008. "Why do policy frames change? Actor-idea coevolution in debates over welfare reform." *Social Forces* 86(3):1027–1054.
- Studlar, Donley T. 1999. "Diffusion of tobacco control in North America." *The ANNALS of the American Academy of Political and Social Science* 566(1):68–79.
- Volden, Craig. 2006. "States as Policy Laboratories: Emulating Success in the Children's Health Insurance Program." *American Journal of Political Science* 50(2):294–312.
- Walker, Jack L. 1969. "The Diffusion of Innovations Among the American States." *American Political Science Review* 63(3):880–899.
- Warner, Kenneth E. 2000. "The Economics of Tobacco: Myths and Realities." *Tobacco Control* 9(1):78–89.
- Wildavsky, Aaron B. 1987. *Speaking Truth to Power*. Second edition ed. New Brunswick: Transaction Publishers.

## Appendix

# A Corpus

## A.1 Corpus description

The time period we examine begins in 1996, which is two years before California adopted the first statewide smoking ban.<sup>12</sup> To analyze public discussions and identify policy frames within a state, we processed articles published in 49 newspapers in the US covering 49 states (see Table A.1). Our goal was to include one newspaper for each state. Accordingly, our corpus includes the largest newspaper in terms of circulation in each state (or one of the largest, depending on availability). The corpus covers the full period for most newspapers.

We retrieved newspaper texts using a simple, broad keyword search from different database providers. Then we split the texts into paragraphs of similar length and removed duplicate paragraphs, which produced a corpus containing 3,159,350 paragraphs. We provide more details on these procedures in Section A.2. A manual evaluation of a random sample of paragraphs revealed a very low share of paragraphs actually covering smoking bans, most likely due to the looseness of our keyword search, which was aimed at minimizing the number of articles on smoking bans escaping our search. To remove irrelevant paragraphs, we conducted a supervised text classification. First, we used the crowd-sourcing platform Crowdfunder to annotate a sample of about 10,000 paragraphs as relevant or irrelevant. We followed the procedures in Benoit et al. (2016) and found that the crowd annotation produced results comparable with three expert codings. In Section A.3 we discuss the coding instructions given to the crowd-workers and the validity of the crowd-coding.

Second, using the information obtained through crowd annotation, we then classified all paragraphs in our corpus as relevant or irrelevant using a machine-learning classifier built with the Python module `scikit-learn`. Prior to the classification, we pre-processed all documents with standard procedures.<sup>13</sup> Next we evaluated seven algorithms<sup>14</sup> on 100 bootstrapped training samples and optimized the output in terms of the ratio between true positives and false positives (i.e., the receiver operating characteristic). The support vector machine proved to be the most effective classifier, outperforming all other algorithms as well as any ensemble of the seven classifiers. As discussed in Section A.4, the support vector classifier worked well, producing a final corpus of 52,675

---

<sup>12</sup>Debates on smoking bans go back at least to the introduction of the first smoke-free spaces in the 1980s. There were occasional acts before then, such as the Minnesota Clean Indoor Air Act, which called for a partial smoking ban in bars and restaurants as early as 1975. However, our analysis requires significant public debates associated with highly visible events.

<sup>13</sup>Text segmentation, tokenizing, removal of punctuation, collapsing of  $n$ -word geographical names such as “New York” to one token (“New\_York”), lemmatizing, part-of-speech tagging, and conversion of all words to lowercase.

<sup>14</sup>Ada boost, Bernoulli naïve Bayes, Gaussian naïve Bayes, K-nearest neighbors vote, random forest, support vector machines, and logistic regression.

Newspaper	State	Articles	Paragraphs	Filtered
Albuquerque Journal	NM	4,953	25,464	849
Argus Leader	SD	3,612	24,375	1,150
Arizona Republic	AZ	9,036	42,408	2,013
Atlanta Journal-Constitution	GA	22,934	110,788	1,486
Austin American-Statesman	TX	12,240	89,282	1,033
Birmingham News	AL	336	1,710	12
Bismarck Tribune	ND	9,549	39,809	1,411
Boston Globe	MA	18,639	108,319	2,257
Charleston Gazette-Mail	WV	17,468	111,375	1,832
Chicago Tribune	IL	30,793	151,594	3,183
Courier Journal	KY	9,919	67,253	2,752
Daily News	NY	14,202	60,828	777
Oklahoman	OK	11,622	43,886	1,093
Dayton Daily News	OH	9,267	43,168	784
Democrat-Gazette	AR	2,392	11,450	76
Denver Post	CO	12,590	77,238	1,292
Deseret News	UT	15,524	56,768	879
Des Moines Register	IA	5,354	39,010	857
Detroit Free Press	MI	11,110	114,349	761
Hartford Courant	CT	14,449	82,292	731
Honolulu Star-Advertiser	HI	1,465	8,282	180
Idaho Falls Post Register	ID	2,066	11,019	95
Indianapolis Star	IN	11,211	92,573	2,346
Las Vegas Review-Journal	NV	9,430	56,605	1,135
Los Angeles Times	CA	29,089	192,816	1,881
Journal Sentinel	WI	16,040	81,146	1,005
Omaha World-Herald	NE	12,295	72,410	1,711
Philadelphia Inquirer	PA	18,966	105,710	1,374
Portland Press Herald	ME	5,374	27,628	718
Post and Courier	SC	13,859	28,405	7
Providence Journal	RI	14,934	86,502	1,349
North Jersey Record	NJ	18,941	90,919	1,368
Richmond Times-Dispatch	VA	22,378	143,867	923
Star Tribune	MN	13,131	113,090	1,840
St.Louis Post-Dispatch	MI	26,883	132,831	2,821
Tampa Bay Times	FL	21,684	164,071	1,271
Baltimore Sun	MD	13,758	88,872	1,621
Billings Gazette	MT	230	1,481	92
Burlington Free Press	VT	1,772	9,659	407
Clarion Ledger	MS	3,052	16,295	443
News Journal	DE	5,174	29,918	1,220
Oregonian	OR	1,580	7,970	141
Seattle Times	WA	16,820	79,862	910
Tennessean	TN	5,130	34,823	608
Times-Picayune	LA	1,412	7,856	90
Union Leader	NH	801	3,321	43
Topeka Capital-Journal	KS	5,707	32,279	564
Wilmington Star-News	NC	6,425	33,689	515
Wyoming Tribune Eagle	WY	1,936	13,062	769
Total		537,532	3,068,327	52,675

Table A1: *Newspaper corpus.*

paragraphs.

## A.2 Newspaper articles retrieval and preprocessing

The keyword string for the different newspaper databases was an adaptation of “tobacco OR non-smoking OR anti-smoking OR smoking OR cigar! OR (lung AND cancer) OR smoker.” The specific form of the keyword string depends on the options available for Boolean operators and truncation wildcards.

We then split the texts into paragraphs of a similar length. The original paragraph structure of the documents was kept, but paragraphs with fewer than 150 tokens were merged until the paragraph exceeded 150 tokens. This ensures the comparability of the texts from different newspapers and across different document formats in each newspaper.

Following many previous newspaper text analyses in political science (e.g., [Hurrelmann et al., 2009](#); [Wueest et al., 2011](#)), we disaggregate the retrieved newspaper articles into single paragraphs. We did so for two reasons. First, newspaper articles have very different lengths. Brief news stories and lengthy background reports occur even within the same newspaper. By splitting articles into paragraphs, we construct a more balanced corpus. Second, in journalistic writings, paragraphs usually are the basic structuring elements that feature a coherent and distinct content, and not all content is relevant for our topic. Our corpus, for example, contains a lot of general reports on parliamentary sessions. The debate on smoking bans is often only one among many debates that are covered in the same news article. Therefore, for our purposes the texts covering such other debates are best discarded for the analysis, as they would just introduce noise.

Finally, we identified and removed duplicate paragraphs. Our downloads contained a considerable number of articles that are almost duplicates of other articles—about 3 to 20 percent, depending on the newspaper outlet. These almost-duplicates are generated because publishers upload different versions of the same article into the database (e.g., when small corrections are made). We found that two paragraphs with a Jaccard distance of 0.97 or higher on their word sets can be safely classified as duplicates and we kept only one of them.

## A.3 Evaluation of crowd coding

Our coding instructions indicated that relevant paragraphs are those containing information on smoking restrictions—that is, bans or limits on smoking in public places or specific workplaces. This definition includes statements about any kind of restriction of smoking (“smoking ban”) in public places or businesses introduced through legislative action, executive action, or other demo-

cratic actions (e.g., direct-democratic processes). By contrast, we defined paragraphs discussing, for example, smoking bans introduced by private actors (e.g., companies, businesses), or bans of specific tobacco products (e.g., mentholated cigarettes), as irrelevant.

average crowd coder judgement	N evaluated as relevant	N evaluated as not relevant	N overall
0	-	6,930	6,930
0.2	-	1,688	1,688
0.4	31	450	481
0.6	98	118	216
0.8	168	40	208
1	373	-	373
total	670	9,226	9,896

Table A2: *Evaluation of crowd coding.*

For establishing a development set for the classification of paragraphs into relevant or irrelevant ones in terms of coverage of smoking bans, we randomly draw around 10,000 paragraphs from the corpus and let them annotate on the crowd-coding platform Crowdfunder.com as follows. First, we coded a sample of 60 paragraphs to establish the gold standard for the crowd coding. We deliberately oversampled relevant paragraphs to make sure crowd coders have enough learning material for this class. In a random sample, their share would have been negligible (around 7 percent). This gold standard was then used for an entry test as well as the continuous quality control during the annotations—every coder needed to have at least 80 percent of the gold standard questions correct. Otherwise, annotations were dropped. Second, we let five crowd coders annotate every paragraph in the full sample. As the evaluation in the following table shows, coders did fully agree in their judgement on most paragraphs. For average judgements of 0 (all coders agree that a paragraph is irrelevant), 0.2 and 1, we only checked a random sample but found no false judgements. As for the average judgements of 0.4 to 0.8 (a total of 905 paragraphs or 9 percent of the sample), we double-checked every paragraph after the crowd annotation. There are false positives and false negatives, as the second and third column in the table below show, but the crowd annotation generally performs well even if not all coders agree in their judgement.

Finally, in terms of sentiment, we defined a paragraph as “pro” smoking bans if it reports facts or opinions that emphasize the need for, or success of, smoking restrictions. Conversely, we defined a paragraph to be “anti” smoking bans if it conveys facts or opinions that highlight potential problems associated with smoking restrictions.

## A.4 Evaluation of the support vector classification filter

The support vector classifier worked well. Our evaluation indicates that 82 percent of the paragraphs classified as relevant, and 99 percent of those classified as irrelevant, are also identified as such in the crowd-annotated data. Moreover, the classifier is able to retrieve 85 percent of all paragraphs crowd-coded as relevant, and 99 percent of those crowd-coded as irrelevant. Finally, most classification runs we tested agreed, with an overall F1-Score<sup>15</sup> of 0.80 or higher—a further sign of the consistency and thus reliability of the classification (Collingwood and Wilkerson, 2012).

	Precision	Recall	N held-out set
Irrelevant	0.99	0.98	1,795
Relevant	0.80	0.84	132
Average	0.98	0.98	1,927

Table A3: *Evaluation of the support vector classification filter. Recall is the fraction of correct classifications among the retrieved documents; precision is the fraction of correct classifications that have been retrieved over the sum of correct classifications; the held-out set is a subset of the training data that is exclusively used for evaluating the classifier.*

---

<sup>15</sup>The F1-Score is the harmonic mean of precision and recall. In addition, the overall F1-Score is inversely weighted by the number of documents in each class.

## **B Discussion of distinct smoking restrictions**

We consider smoking bans in seven areas: restaurants, bars, government worksites, private worksites, hotels, malls, and indoor arenas. These areas provide a useful range of policies for several reasons. First, they represent the majority of smoking bans that were considered and enacted. Second, these policies allow for a wide variety of potential frames to emerge. As our empirical analysis has shown, certain frames are likely regardless of context, such as freedom and health. Others, such as the effects of secondhand smoke, are likely to arise in the context of these particular types of adoptions, as are frames specific to some of the more controversial of these areas (e.g., bars, restaurants, casinos, and other indoor locations). And still others are likely to be generic, but definitely have the potential to arise here, such as problems with enforcement or regulation or the influence of tobacco companies. Third, these various restrictions allow for both the possibility of learning and emulation, which facilitates testing of two of our main expectations. As discussed earlier, issues related to the individual right to smoke and to health concerns will arise in any of these contexts where smoking is curtailed. On the other hand several of these areas—notably, bars, restaurants, and casinos—presented complicated cases where there was a great deal of uncertainty about the economic effects of restrictions, which is particularly relevant for learning. Consequently, the adoption of each distinct smoking restriction (or set of common restrictions) is likely to be more relevant for different frames. This argument offers promising perspectives for future research, where it could be elaborated more in detail.

## C Topic models

### C.1 Topic model coherence and discrimination

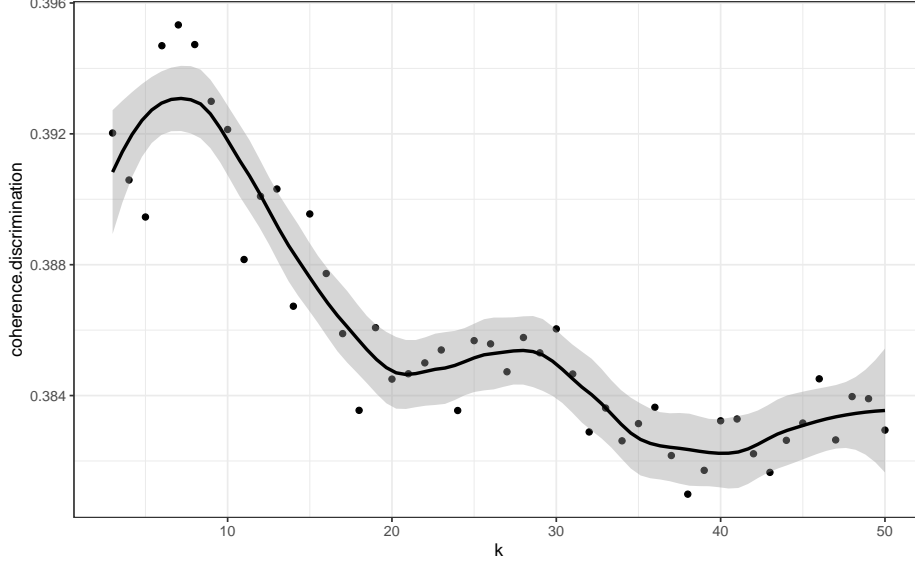


Figure C1: *Word2vec* topic coherence and discrimination averages for varying numbers of topics.

For this evaluation, the word2vec topic coherence and discrimination is calculated as follows (O’Callaghan et al., 2015). Let  $T = t_1, \dots, t_K$  be the  $K$  topics estimated by a model and  $t_i = [w_{i1}, \dots, w_{iP}]$  a vector of  $P$  top-ranked words that characterize each topic.<sup>16</sup> In addition, let  $w_{ij} = [d_{i1}, \dots, d_{iD}]$  be the  $D$  dimensional semantic space estimated by *word2vec* for term  $w_j$  in topic  $i$ . Then, the coherence of topic  $t_i$  is the mean pairwise cosine similarity among the terms in the topic’s word vector (see Greene and Cross, 2017):

$$c(t_i) = \binom{P}{2}^{-1} \sum_{m=2}^P \sum_{n=1}^{m-1} \cos(\theta_{w_{im}, w_{in}}).$$

The discrimination between two topics  $t_i$  and  $t_j$ , in contrast, is the averaged inverse of the pairwise cosine similarity of all word pairs across the topics:

$$d(t_i, t_j) = P^{-2} \sum_{m=1}^P \sum_{n=1}^P (1 - \cos(\theta_{w_{im}, w_{jn}})).$$

<sup>16</sup>The probability of observing each word in the vocabulary under a given topic, or  $\beta$ , is one of the main outputs of the STM (Roberts, Stewart and Airoldi, 2016). For the most-probable word lists per topic, words are ranked according to their topic-specific probability.

Our objective function for the evaluation of the topics, finally, is the average of discrimination and coherence weighted by  $\alpha$ , which is set to 0.3 in our case:

$$f(T) = \alpha \binom{K}{2}^{-1} \sum_{i=2}^K \sum_{j=1}^{i-1} d(t_i, t_j) + (1 - \alpha) K^{-1} \sum_{i=1}^K c(t_i).$$

## C.2 Results using alternative spatial lags

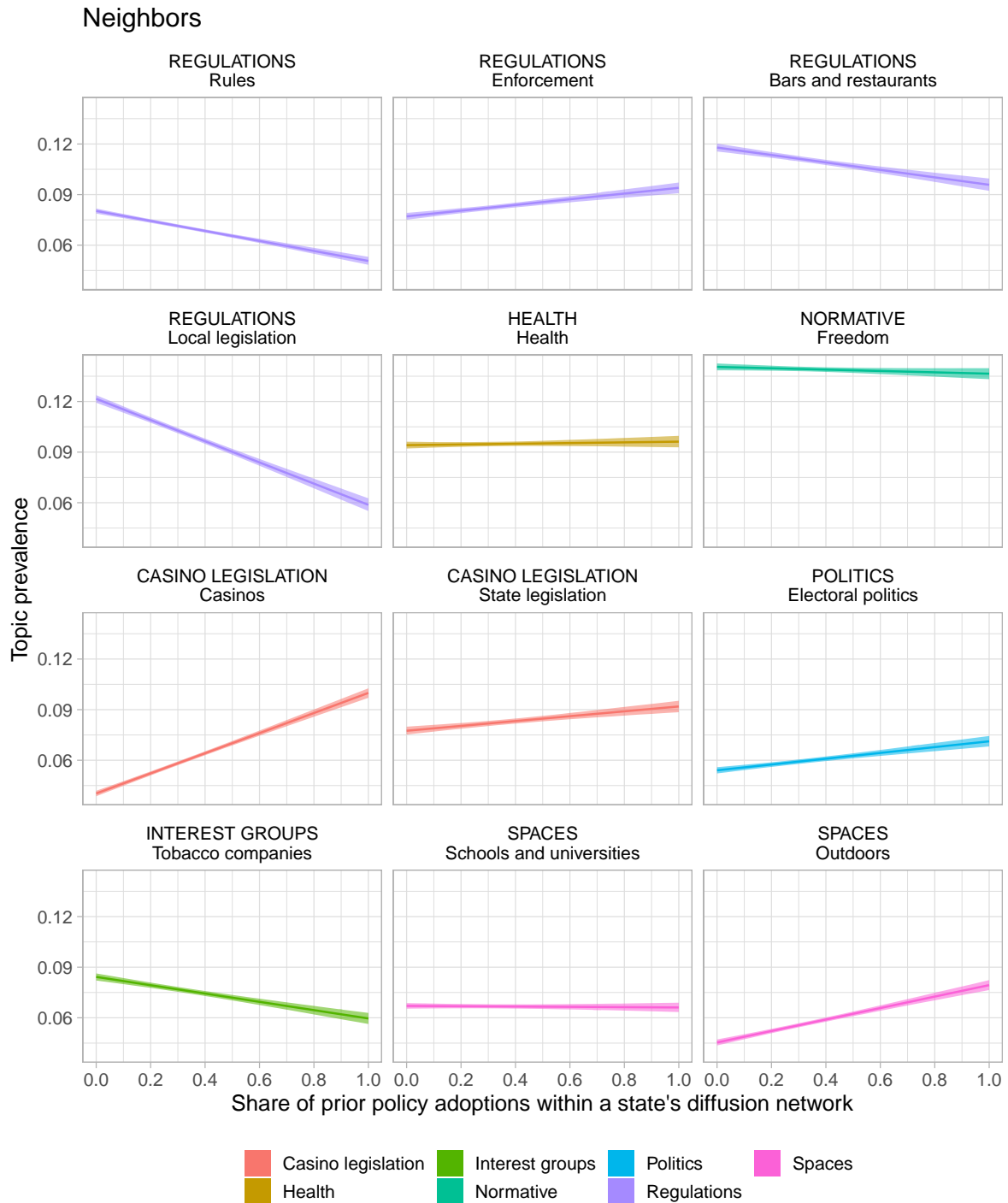


Figure C2: *Topic prevalence co-varies with the share of prior policy adoptions among a state's neighbors.*

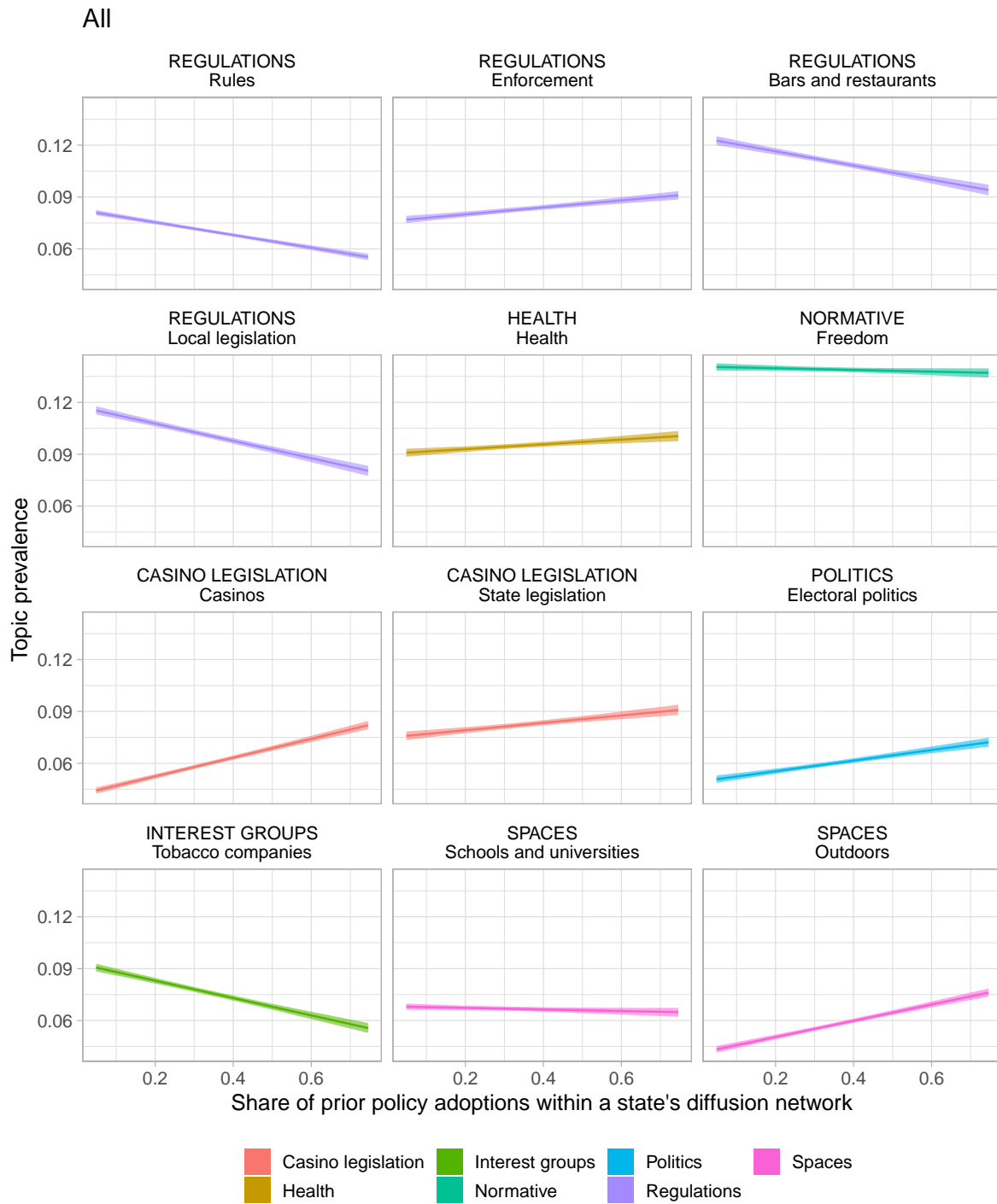


Figure C3: Topic prevalence co-varies with the share of prior policy adoptions among all other states.

### C.3 Validation

We validate the output of the model by considering some correlations that help us to assess the plausibility of our results. First, we consider how topics correlate with the timing of smoking ban adoptions at the state level. Figure C5 below shows that the topic *State legislation* is much more prevalent during months in which state legislation was adopted than in other months, which, of course, is exactly what one would expect.<sup>17</sup> Second, Figure C6 looks at the prevalence of topics before and after adoption. This figure shows peaks for several of our topics at the moments one would expect them to be most prominent: *State legislation* and *Electoral politics* during the month of adoption, and *Enforcement* in the first couple of years following policy adoption.<sup>18</sup> Third, we find greater attention to the electoral implication of adoptions in states where restrictions on smoking are more likely to be politically controversial. In particular, we would expect to find the *Electoral politics* topic to be more common in states where more people smoke, in more politically conservative states, and in states that are under Republican control. Figure C7 shows support for these expectations.

Finally, as we mention in the text, we also coded the sentiment of each topic—that is, whether the newspaper paragraph exhibited a “pro” smoking bans approach (i.e., a positive sentiment toward such bans and restrictions) or an “anti” smoking bans approach (i.e., a negative sentiment). Examining the sentiment for each topic allows us to further validate our measure. In particular, we would expect the *Health* topic to have the most positive sentiments, indicating that when this topic is discussed it is discussed in terms supportive of smoking restrictions. We also would expect that the more controversial topics such as *Bars and restaurants* and *Casinos*, which opponents of smoking bans have argued will be hurt by such bans (Warner, 2000), as well as *Enforcement*, to exhibit more negative sentiments, indicating that these are the most commonly raised arguments against smoking restrictions. And that is indeed what we find, with Figure C4 showing the *Health* topic exhibiting the most positive sentiments and *Bars and restaurants*, *Casinos*, and *Enforcement* exhibiting the most negative sentiments.<sup>19</sup>

---

<sup>17</sup>Intuitively, correlations with other topics are small, with the exception of *Local legislation*, which is much less prevalent during months in which state legislation was adopted.

<sup>18</sup>We also notice a sharp drop for *Local legislation* at the time of state legislation enactment since, likely because state-wide legislation usually removes the need for legislative action at the local level. And we see an increase after adoptions for *Tobacco companies*, potentially due to lawsuits or other legal action on their part.

<sup>19</sup>It might be surprising to see *Freedom* so high on the scale, but both proponents and opponents bring up this issue, and the arguments of the former appear to dominate.

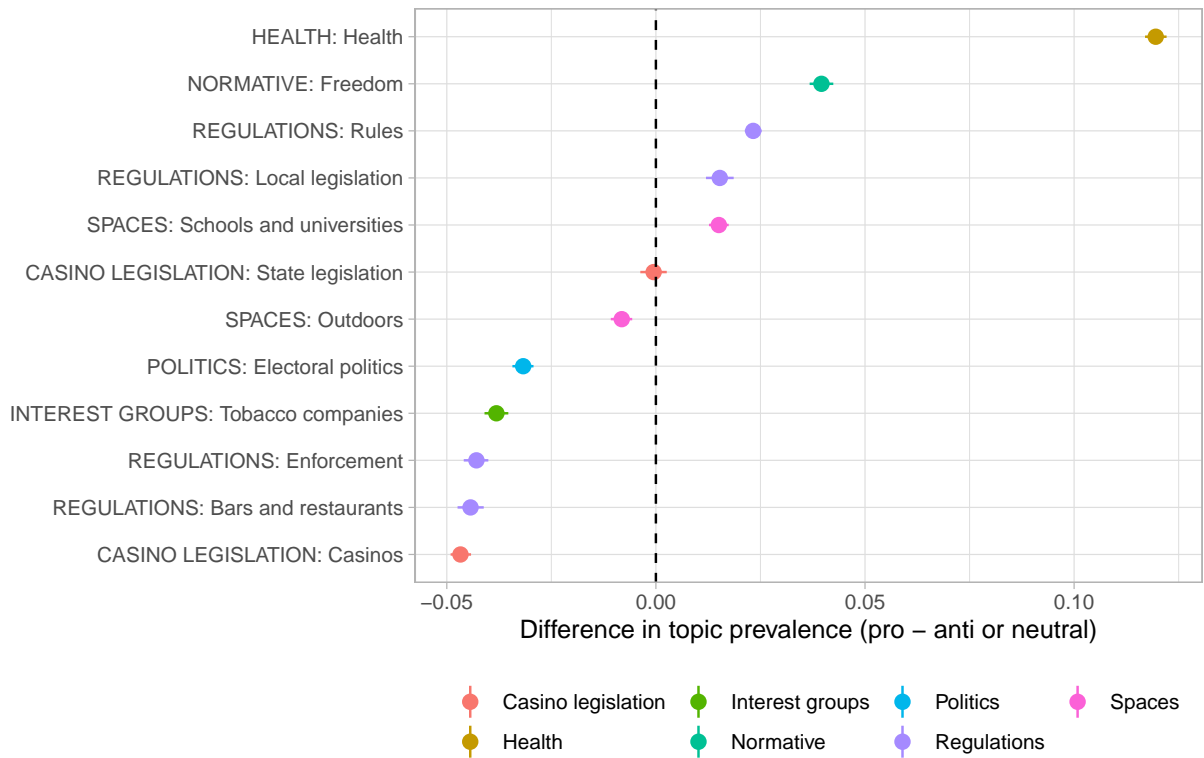


Figure C4: *Topic prevalence and sentiment. “Pro” means that a paragraph reports facts or opinions that emphasize the success of, or need for, smoking restrictions. “Anti” denotes paragraphs conveying facts or opinions that highlight potential problems associated with smoking restrictions.*

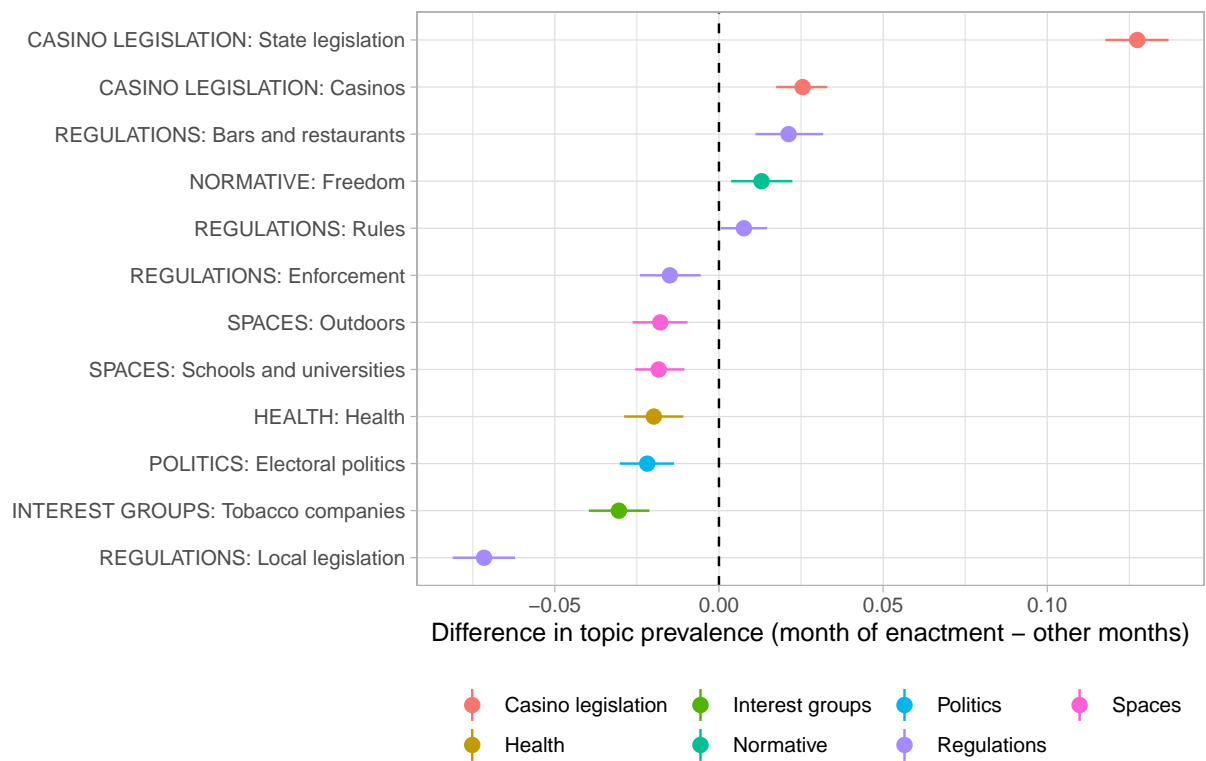


Figure C5: *Topic prevalence as a function of policy adoption at the state level in a given month.*

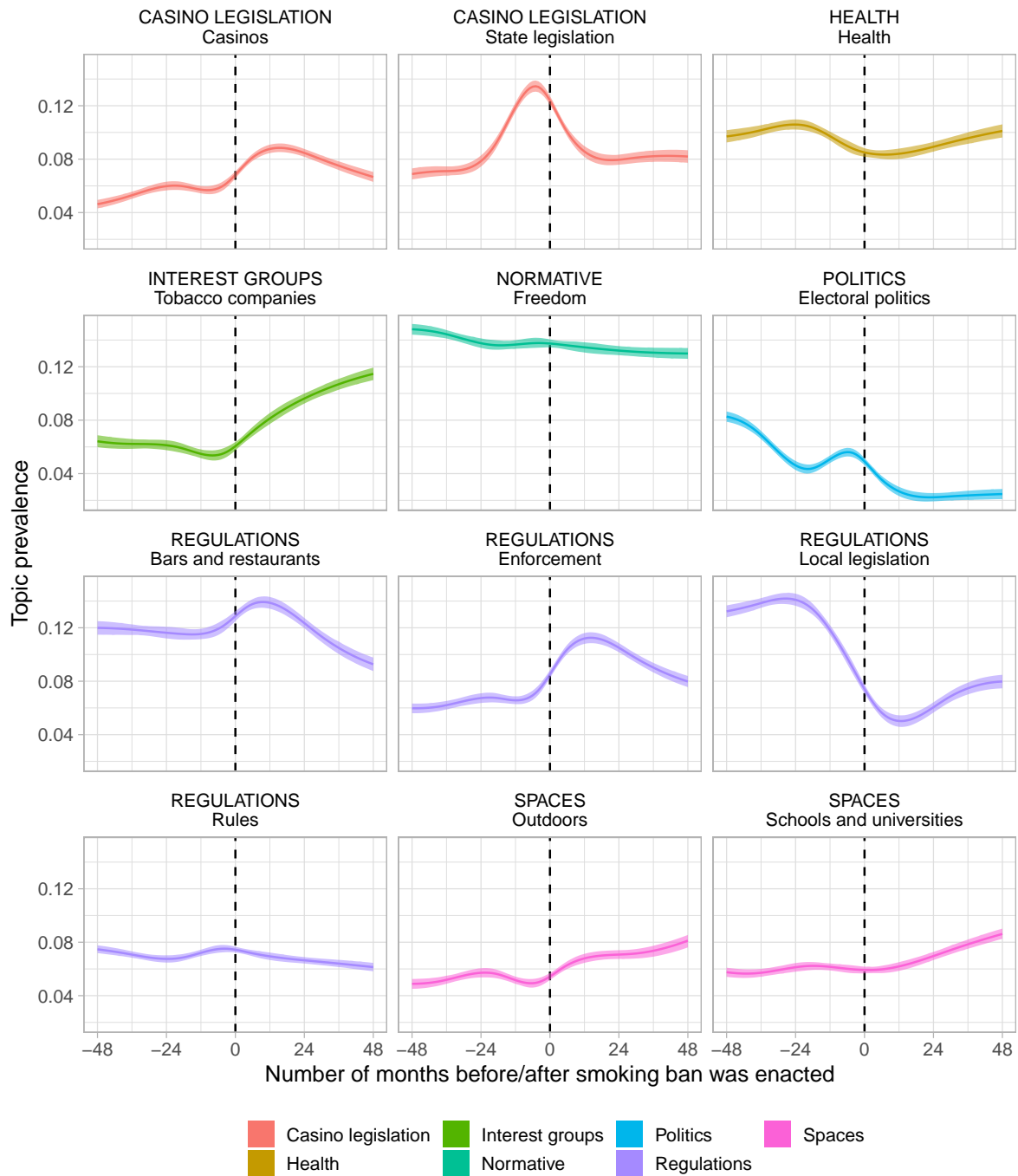


Figure C6: Topic prevalence as a function of the number of months prior to or since policy adoption at the state level.

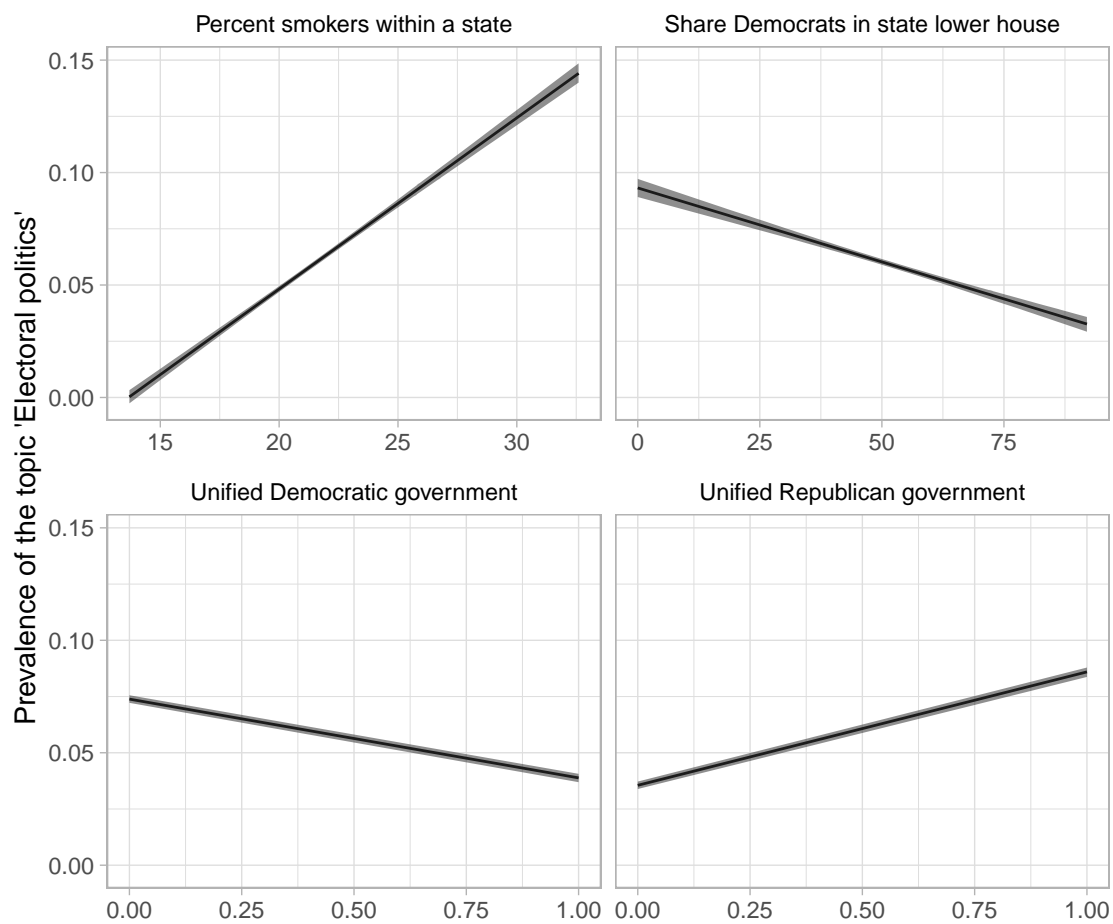


Figure C7: *Prevalence of the topic Electoral politics as a function of four variables.*

#### C.4 Top-50 words for the twelve-topic model

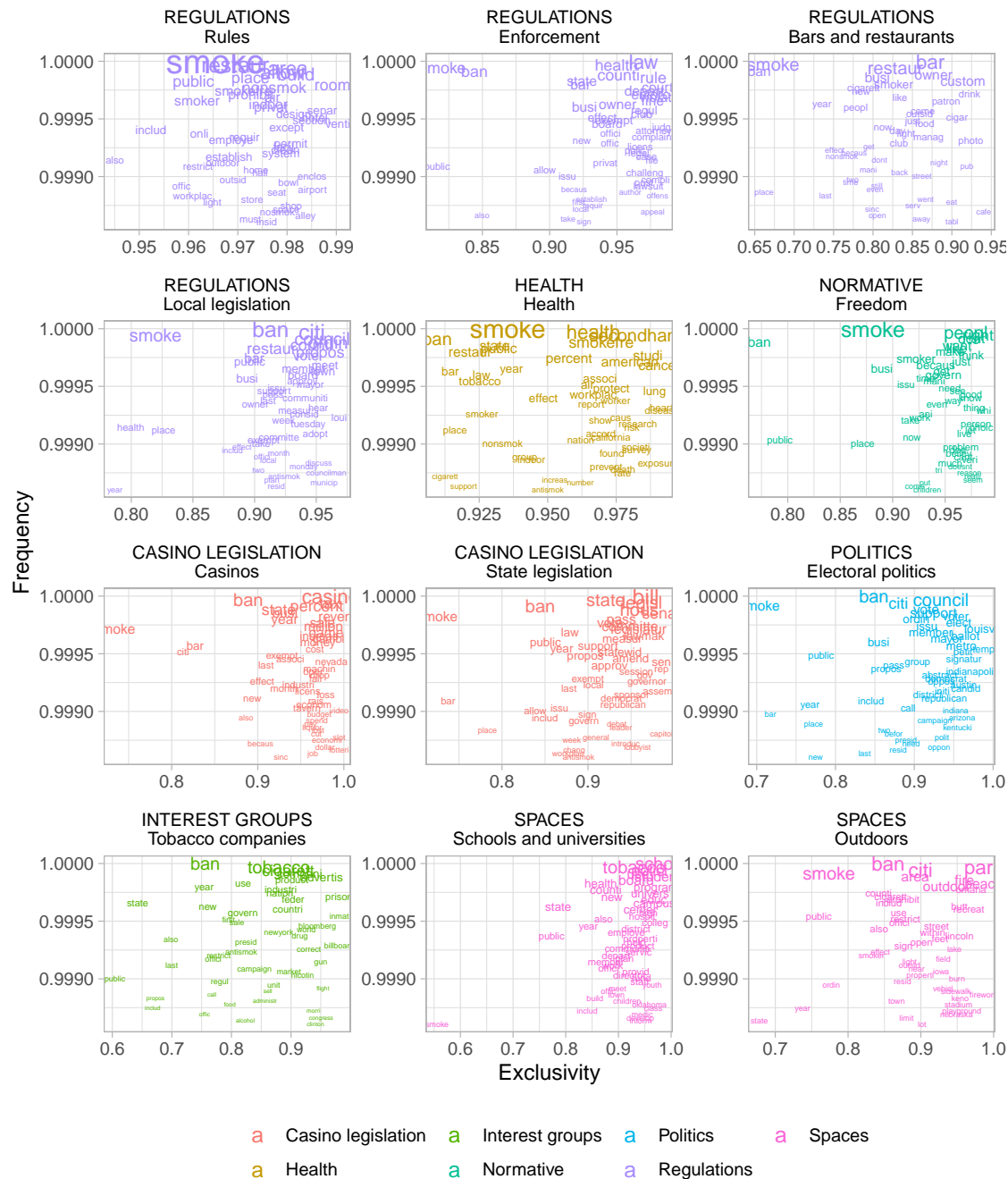


Figure C8: *Top-50 words for the twelve-topic model. Exclusivity refers to the frequency with which words occur for one topic, compared to the occurrence for all other topics.*

## C.5 Topic concentration

We assess here how topic concentration is related to the share of prior policy adoptions within a state’s diffusion network. To do so, we follow an anonymous reviewer’s suggestion and use the Herfindahl-Hirschman Index, which was originally developed as a measure of market concentration (Hirschman, 1964). In our case, the index is defined as the sum of the squares of topic proportions. Theoretically it ranges from 0 (when there is an infinity of topics with very small proportions) to 10,000 (when there is a single topic,  $100^2 = 10,000$ ). Because we assume twelve topics, in our application the minimum is about 833, when each topic has the same prevalence, while the maximum is slightly less than 10,000 because the topic model assumes non-zero topic proportions.

Concretely, we compute the index for each document in our corpus and than regress it on the share of prior policy adoptions within a state’s diffusion network. The results are show in the following table:

	Model 1
(Intercept)	2740.52*** (9.49)
Share of prior policy adoptions within a state’s diffusion network	92.64*** (18.16)
R <sup>2</sup>	0.00
Num. obs.	52,675

\*\*\* $p < 0.001$ , \*\* $p < 0.01$ , \* $p < 0.05$

Table C1: *Correlation between topic concentration and the share of prior policy adoptions within a state’s diffusion network*

There is a statistically significant correlation between topic concentration and the share of prior policy adoptions within a state’s diffusion network. The correlation is positive but substantively small: it corresponds to about 8% of a standard deviation.

## C.6 Representative paragraphs per topic

Original text of two of the most relevant paragraphs for each topic. Relevance is based on the maximum-a-posteriori (MAP) estimate of the modus of the proportion of words assigned to the topic.

---

### *Health*

At least in a non-smoking environment smokers and non-smokers can exist. Some facts about second-hand smoke:

1. Secondhand smoke has been classified by the Environmental Protection Agency as a known cause of cancer in humans (Group A carcinogen).
2. Secondhand smoke causes approximately 3,000 lung cancer deaths and 35,000 - 62,000 heart disease deaths in adult nonsmokers in the United States each year.
3. A study found that nonsmokers exposed to environmental smoke were 25 percent more likely to have coronary heart diseases compared to nonsmokers not exposed to smoke.
4. Nonsmokers exposed to secondhand smoke at work are at increased risk for adverse health effects. Levels of ETS in restaurants and bars were found to be two to five times higher than in residences with smokers and two to six times higher than in office workplaces.

Since 1999, 70 percent of the U.S. workforce worked under a smoke-free policy, ranging from 83.9 percent in Utah to 48.7 percent in Nevada.

---

#### Smoking bans help curb kids' asthma

New research shows smoking bans spare many children with asthma from being hospitalized, a finding that suggests smoke-free laws have even greater health benefits than previously believed. Other studies have charted the decline in adult heart attack rates after smoking bans were adopted.

The new study, conducted in Scotland, looked at asthma-related hospitalizations of kids, which fell 13 percent a year after smoking was barred in 2006 from workplaces and public buildings, including bars and restaurants. Before the ban, admissions had been rising 5 percent a year in Scotland, which has a notoriously poor health record among European countries. Earlier U.S. studies, in Arizona and Kentucky, reached similar conclusions. But this was the largest study of its kind – and offered the strongest case that smoking bans can bring immediate health improvements. About 40 percent of American children who go to hospitals because of asthma attacks live with smokers – a high proportion, given only about 21 percent of U.S. adults smoke, according to Atlanta's Centers for Disease Control and Prevention. The new study is published in today's New England Journal of Medicine.

---

### *Rules*

---

#### Rule highlights:

- Required restaurants, bars, pool halls, bingo halls and bowling alleys to be designated as entirely smoking or completely smoke-free, or allow smoking in designated rooms that met ventilation standards.
- Indoor workplaces, including lobbies and areas of public access, would have been required to be smoke-free or have the same ventilation standards as restaurants.

---

#### No-smoking rules

- A "smoke-free" establishment prohibits smoking.
- An "effectively smoke-free" establishment limits smoking to separately ventilated areas.
- An "all smoking area" establishment permits smoking but does not have a designated nonsmoking area.
- Small restaurants, establishments that seat less than 50 people, are required to become smoke-free or effectively smoke-free.
- Larger restaurants, that seat more than 50 people, taverns and clubs can choose to become entirely smoke-free, effectively smoke-free or all-smoking.
- Indoor workplaces that employ 15 or more people are required to be entirely smoke-free or effectively smoke-free. Exceptions include private offices; indoor workplaces operated by a family with only incidental public access; and small indoor workplaces that employ less than 15 people and only incidental public access.

Source: Oklahoma Health Department

---

---

### *Freedom*

---

#### Letters from readers: Tyrannical smoking ban

The May 27 Star Tribune article about the smoking ban debate in St. Paul reminded me of one of my favorite quotes from C.S. Lewis: "Of all tyrannies, a tyranny exercised for the good of its victims may be the most oppressive. It may be better to live under robber barons than under omnipotent moral busybodies. The robber baron's cruelty may sometimes sleep, his cupidity at some point be satiated; but those who torment us for our own good will torment us without end, for they do so with the approval of their own conscience." Regardless of what ban supporters say, this is not about public health; it's about controlling the lives of others. These people simply cannot stand the fact that people enjoy smoking and they will use every lie in the book to try to deny people that right.

Patterson: We have, like our namesake, a libertarian streak, I guess would be a way to put it. People always want to label us, and, like everybody else, we don't like to be labeled. But we're probably somewhere between conservative and libertarian, but we definitely believe – I think it's fair to say – that government ought to respect people's freedom to live their lives as they see fit if they're not interfering with somebody else. That's sort of our outlook on a lot of the issues that come along. In fact, we believe in that so much that one of the controversies in the past that we got the most criticism on was on the smoking ban. That was the issue there to us (personal freedom). There also was a property-rights issue. Frankly, most of the things we stand for are not that unpopular with the people; they're unpopular with government. But we lost some support and some friends (over smoking), and it's not really that important of an issue. But the ability to be able to live your life as you see fit without the government telling you what to do, that is important to us.

---

### *Outdoors (residual)*

---

#### Rain means parks to ban fires earlier

Affected parks include Lake Pleasant, White Tank Mountain, Adobe Dam, Buckeye Hills, Estrella Mountain, San Tan Mountain, Usery Mountain, McDowell Mountain, and Cave Creek regional parks, and Spur Cross Ranch Conservation Area.

Campfires, fire pits and charcoal grills will be banned from county parks earlier than usual this year after winter rains generated extra vegetation.

Starting May 12, gas or propane grills will be the only fire allowed in county parks, and only in designated areas, the Maricopa County Parks and Recreation Department said. Violators could be subject to a fine or community service.

Parks officials are concerned that plants fed by winter rains that have since dried out could fuel brush fires.

Smoking is allowed, although people are asked to extinguish and dispose of cigarettes or other smoking materials.

Affected parks include Lake Pleasant, White Tank Mountain, Adobe Dam, Buckeye Hills, Estrella Mountain, San Tan Mountain, Usery Mountain, McDowell Mountain, and Cave Creek regional parks, and Spur Cross Ranch Conservation Area.

In addition to the fireworks ban on the city's east side, Provo officials have also prohibited the discharge of firecrackers within 20 feet of combustible vegetation or structures.

The restricted east bench area begins east of South State Street, north to 900 East, north to Timpview Drive, north to Foothill Drive, west to Canyon Road, and north to University Avenue.

Grantsville city is restricting fireworks use until further notice to one quadrant of the city while it is banned throughout the rest of the city.

Fire restrictions are being imposed at Lake Powell and throughout the Glen Canyon National Recreation Area. The Park Service is banning all campfires, even along shoreline and beach areas as well as in developed campgrounds and picnic areas.

The use of charcoal grills also is prohibited, including those on houseboats or other vessels. Stoves fueled by propane or liquid petroleum gas are permitted. Smoking essentially is banned except inside an enclosed vehicle or at a developed recreation site.

---

### *Schools and universities*

---

---

#### Tech Center to Examine I.D. Badges Carefully

New security badges that students are required to carry with them for identification at Moore Norman Technology Center will also be used to stop high school students from smoking on campus.

Last year, high school students 18 and older were allowed to smoke on campus.

Now a ban on smoking this year will keep all high school students, regardless of age, from smoking on campus.

This change was modeled after the no smoking policies of Moore Public Schools and Norman Public Schools, said Moore Norman Technology Center spokeswoman Diana Hartley.

The primary use of the badges is for identification. Employees at the technology center will wear the badges on their clothing while students will carry the badges with them, she said. Eventually, the badges will also be used to check out library books and in the grading process.

"We also plan to use it (the badge system) so that students can get a discount at restaurants and local businesses," Hartley said.

---

#### Tech center adds simulated products to tobacco ban

Moore Norman Technology Center is joining a growing list of educational facilities that support and have in place a tobacco-free campus policy.

The center's board members voted recently to ban the use of all tobacco products on campus, beginning July 1. The new policy also prohibits simulated tobacco products such as electronic cigarettes or vapor inhalers.

Smoking has been banned inside the school's buildings for years, but the policy extends the prohibition to the campus grounds.

In a release about the new policy, board members said they were dedicated to providing a healthy, comfortable and productive environment for staff, students and visitors.

The center includes the Franklin Road campus at 4701 12th Ave. NW in Norman and the South Penn campus at 13301 S Pennsylvania in Oklahoma City.

---

#### Local legislation

Meanwhile, Naperville officials this week delayed voting on a proposed smoking ban.

On Tuesday night after hearing speakers on both sides, the Naperville City Council delayed the vote for two weeks.

In Bartlett, efforts to pass a smoking ban also sputtered Tuesday night as officials failed to send a recommendation on a proposed smoking ban to the full Village Board for a vote.

Officials said they are trying to balance concerns about public health and the potential negative economic impact on the business community.

"That's the issue in a nutshell," said Bartlett economic development director Tony Fradin.

On March 6, the full Village Board is slated to vote on the anti-smoking measure.

Cook County's smoking ban, which county commissioners failed to delay Wednesday, goes into effect March 15. The ban stands to affect the portions of Bartlett that lie in Cook County.

---

#### County lacks votes to delay smoking ban set for March 15

Some board members sought to push back to July 2008 the smoking ban for taverns and for restaurants with bars, a date that would have coincided with Chicago's smoking ordinance.

Cook County's smoking ban will go into effect March 15 despite a last-minute attempt Wednesday by some county commissioners to delay its implementation.

Some board members sought to push back to July 2008 the smoking ban for taverns and for restaurants with bars, a date that would have coincided with Chicago's smoking ordinance.

But that proposal failed Wednesday when the County Board deadlocked 8 to 8, with Commissioner Joseph Mario Moreno (D-Chicago) absent.

The ban, approved last year, allows municipalities to opt out of the ordinance by drafting their own laws.

---

#### State legislation

---

SB 566 by Robinson – Smoking. Would prohibit smoking in public buildings, restaurants and indoor workplaces. Amended and passed by Senate Human Resources Committee; amended and defeated by full Senate; held on a motion to reconsider; motion to reconsider adopted; passed by full Senate; withdrawn from House Commerce, Industry and Labor Committee; passed by House Rules Committee; referred to full House. SJR 21 by Hobson – Smoking. Would prohibit smoking in restaurants and most other public places. Committee substitute passed by Senate Human Resources Committee; passed by full Senate; passed by House Rules Committee; referred to full House.

---

#### Senate snuffs out more restrictions on public smoking

Anti-smoking advocates suffered a major setback Tuesday when the Senate rejected a bill to place tough restrictions on smoking in public places.

After a 90 minute debate, senators voted 24-22 against Senate Bill 566, the anti-smoking bill by Sen. Ben Robinson, D-Muskogee. The measure was three votes short of the 25 needed to pass.

The rejection caused Senate leader Cal Hobson, D-Lexington, to postpone a vote later Tuesday on his anti-smoking proposal, Senate Joint Resolution 21, which has the backing of the Oklahoma Restaurant Association.

Sen. Mike Morgan, co-author with Hobson of SJR 21, conceded that Tuesday's vote on the other bill was a setback.

"It's clearly a signal we're not there," said Morgan, D-Stillwater.

Robinson said he was disappointed by the vote.

His legislation would have extended a smoking ban into all indoor workplaces, public or private, with some exceptions.

---

#### Electoral politics

---

##### Decision on Nov. ballot inclusion due next week

Cheyenne – With 20 petition pages still to review, City Clerk Carol Intelkofer said she plans to announce early next week whether enough signatures have been collected to put Cheyenne's smoking ban on the Nov. 7 general election ballot.

The names and residency of each of the petition's signers have to be verified, Intelkofer said.

She said she has eliminated many names either because they are not city residents or because they are not registered to vote.

Both of those are key requirements for getting the measure on the ballot. In all, 2,690 signatures from qualified registered voters are required.

---

##### Newcomer tests Fleming in Metro Council race

##### Democrat Blakemore stressing leadership

Louisville Metro Council incumbent Ken Fleming is facing a strong challenge from political newcomer Neville Blakemore, who is making an issue of Fleming's position on smoking curbs.

Fleming, 45, a Republican who lives in Riverwood, and Blakemore, a Democrat who lives in Druid Hills, are vying in the Nov. 7 election to represent District 7, which also includes parts of St. Matthews, Indian Hills and other small cities in eastern Jefferson County.

Ken Fleming 45, incumbent, Republican, vice president of LandAir Mapping Inc.: "I supported the most recent comprehensive smoking ban.

---

#### Enforcement

---

##### Smoking ban filed properly, agency says; Nitro Moose petition alleges new rule wasn't

A Kanawha-Charleston Health Department administrator says the agency properly filed its expanded smoking ban regulations with the Kanawha County clerk's office, and she's got the documents to prove it. The Health Department filed the regulations on Dec. 11, 2007, five days after the agency recorded the same rules at the Charleston city clerk's office, said Administrative Services Director Lolita Kirk. The Nitro Moose Lodge filed a petition in Kanawha County Circuit Court last week, alleging that the smoking ban doesn't apply to bars outside Charleston's city limits because the Health Department failed to file the regulations with the county clerk's office.

The expanded smoking ban took effect July 1, and the Moose is one of six Kanawha County businesses that face misdemeanor charges for allegedly violating the smoking regulations.

---

---

#### Bar owner's smoking ban suit dismissed

Abstract: In a three-paragraph memorandum issued Thursday, the appellate court said the lawsuit was moot because the bar, Sporty O'Toole's, had since gone out of business and owner Boyd Cottrell told the court he doesn't plan to open another. Because the bar is closed, it's no longer affected by the ban, therefore there's no reason to continue the lawsuit, the court said.

Free Press Staff Writer

A Warren bar owner's lawsuit challenging the state's smoking ban was dismissed by the state Court of Appeals without the court addressing the issue of the law's constitutionality.

In a three-paragraph memorandum issued Thursday, the appellate court said the lawsuit was moot because the bar, Sporty O'Toole's, had since gone out of business and owner Boyd Cottrell told the court he doesn't plan to open another.

---

#### Tobacco companies

The company has made that point in broadcast advertisements, in fliers it has inserted in cigarette packs from 2002 to 2009, on its website and on tear-tape on cigarette packages, he said. "We will continue to communicate that there is no safe cigarette," Phelps said.

In addition to the ban on the terms "light," "ultra-lights," "mild," "smooth" and "low-tar" in describing cigarettes, the key new FDA regulations:

- require larger and more strongly worded warnings on smokeless tobacco packaging and in advertising;
- make it a federal violation to sell cigarettes or smokeless tobacco to minors;
- ban selling packs of fewer than 20 cigarettes (to keep the cost out of reach of minors); and
- ban tobacco brand-name-labeled giveaways, such as T-shirts or hats, with purchases of cigarettes or smokeless tobacco.

Europe Trade Bloc OKs a Phased-In Ban of Tobacco Ads; Regulation: Move by health ministers of 15-nation EU also targets sponsorship of cultural, sports events. Cigarette firms vow fight to 'communicate with consumers.'

Health ministers from Western Europe, where smoking is blamed for more than half a million deaths each year, overcame eight years of deadlock Thursday, agreeing to phase in a ban on tobacco advertising and sponsorship of sports and cultural events by tobacco companies.

Under the European ban, which goes much further than the U.S. ban on tobacco ads on television and radio in effect since the 1970s, most advertising, including on billboards, must cease within three years. Ads in media printed in Europe, including newspapers and magazines, must end within four years. Indirect advertising, such as apparel bearing the name of cigarette brands, would have to end within six years. Although more sweeping, the European ban is not nearly as immediate as the advertising restrictions contained in the proposed U.S. tobacco deal announced June 20. Under the sweeping American agreement, negotiated among cigarette makers, state attorneys general and private anti-tobacco lawyers, tobacco billboards and sponsorship of sporting and cultural events would be banned almost right away, as would caps, shirts and other items carrying tobacco logos.

---

#### Bars and restaurants

Galen Sprague and Marchello Marchese, who say they don't mind stepping outside to take a cigarette break, join other smokers outside the Lansdowne Street clubs during the wee hours of May 10, on the first weekend since Boston's smoking ban went into effect.

Charlie Lawson took a final drag of a Westport cigarette before crushing it into the ashtray in front of him. Now he was ready to order a cheeseburger. "I like to sit down for a while and smoke before I eat"; said Lawson, 53, a regular at Four Coins Restaurant in central St. Petersburg. "And after I eat I like to smoke. Smoking is a big part of my life. Too big a part of my life, probably."

---

#### Casinos

---

---

Colo. casino revenue declined 12% in 2008

Colorado's mountain-casino revenue dropped nearly 17 percent in December, wrapping up a year in which the industry suffered declines every month.

For 2008, casinos statewide reported adjusted gross proceeds, or total bets minus payouts, of \$715.8 million, down 12 percent from \$816.1 million in 2007, according to data released Wednesday by the Division of Gaming. It was the worst annual drop for the industry since casino gambling launched in the state in October 1991.

The industry has attributed the struggles largely to the sluggish economy and a smoking ban that went into effect in January 2008. Some officials have also pointed to high gas prices during the first half of last year.

Black Hawk's 20 casinos generated \$508.6 million in adjusted gross proceeds in 2008, down 12.5 percent from \$581.3 million in 2007. Cripple Creek's 16 casinos produced \$140 million, down 9.6 percent, and Central City's six casinos totaled \$67.1 million, down 15.9 percent.

---

Herbst Gaming seeks debt fix

Herbst Gaming, which has taken a financial hit in the past year after a statewide smoking ban cost the company customers in its slot machine route operation, has asked Goldman Sachs to assist in evaluating financial and strategic alternatives, including the sale of the business.

In a statement released Wednesday, Las Vegas-based Herbst Gaming, which significantly grew its statewide casino business through two high-profile acquisitions in 2007, said the alternatives could include a recapitalization, refinancing, restructuring or reorganization of the company's debt, or a sale of some or all of its businesses.

---

## D Extrapolation of diffusion networks

The binary diffusion ties in the policy diffusion networks in [Desmarais, Harden and Boehmke \(2015\)](#) are inferred from diffusion cascades of 160 policies and cover the years from 1960 to 2009. The paragraphs in our corpus were published in the time period from 1996 to 2013, which is why we need to extrapolate the existing diffusion network data for the four years from 2010 to 2013. In order to achieve this, we fit four separate temporal exponential random graph models (tergm) as follows.<sup>20</sup> For each extrapolation, a series of networks is created that corresponds to the time interval which is extrapolated (1 year for 2010, 2 years for 2011, etc.). For example, to extrapolate to 2010 (1 year time interval), we fit a tergm model to 2006, 2007, 2008 and simulate for 2009. This simulation is evaluated against the existing network data for 2009. For each of the models the optimal combination of the following network statistics is then used to predict the missing year: the baseline probability of establishing edges in the network, the square roots of the indegree and outdegree centralities of each node, the edge innovation and edge loss statistics, and a temporal lag in form of a reciprocity term delayed by a single time period. The following table reports the out-of-sample evaluation for the four extrapolated years:

Year	Precision	Recall	F1 score
2010	0.77	0.87	0.82
2011	0.90	0.78	0.83
2012	0.91	0.77	0.83
2013	0.89	0.78	0.83

Table D1: *Out-of-sample-evaluation*

---

<sup>20</sup>This procedure was designed and implemented by Fridolin Linder.

## E Distinction between “Rules” and “Enforcement” topics

We discuss here more in depth the distinction between two topics, *Rules* and *Enforcement*. Although the two topics are related, they are distinct in important ways, as the examples in the next sections (fifteen for each topic) clearly show. In particular, *Enforcement* is focused on the implementation stage, while *Rules* is not.

*Rules* refers to the way smoking bans are designed: where exactly is smoking prohibited? What specific requirements do businesses have to respect? This topic is often discussed in a prospective way, when reporting on policies that are in elaboration or that are about to pass or take effect. Although the rules are obviously relevant for implementation, the topic does not invoke the process of implementation.

*Enforcement* refers to the way smoking bans are enforced, and specifically to implementation problems such as lawsuits and sanctions. The topic is clearly focused on the implementation stage of smoking bans.

These distinctions are clearly visible in the examples shown in the next two sections.

### E.1 Examples for topic “Rules”

---

But the proposal would prohibit smoking in bowling alleys, bingo parlors, restrooms, buses, taxis and public telephone booths. The ban also encompasses elevators, lobbies and waiting rooms as well as hallways and common rooms used in apartment buildings, retirement homes, halfway houses and other multiple-unit living areas. It will even include SantaFe homes used as day cares. Employers will be required to tell their workers of the proposal within three weeks of its enactment. Employers also will have to supply a written copy of the smoking policy upon request to existing or prospective employees. No one will be allowed to smoke within a 15-foot radius of “any enclosed area where smoking is prohibited” to ensure smoke from entering through doors, windows and any ventilation systems. Building owners and managers will have to post city-approved signs indicating where smoking is prohibited, and no one smoking in a nonsmoking restaurant section may be served food or drink.

---

Smoking would be permitted in government-owned open-air facilities, such as the Frederick Brown Jr. Amphitheatre, and outside government buildings in designated areas. Employees of retail businesses could smoke, subject to the wishes of the business license holder, in areas not accessible to the general public. Smoking would be prohibited in public areas such as lobbies and reception areas in office, industrial and other nonretail facilities. Private offices are not considered to be public. Hotels and motels could permit smoking in designated private rooms and in other specified areas, including a bar or restaurant adjacent to a lobby. But smoking would be prohibited in lobbies, hallways, elevators and restrooms.

---

Smoke-free dining. Smoking allowed in a bar area, separated at least 6 feet from a dining room, or by a floor-to-ceiling barrier. Seating in bar area cannot exceed 25 percent of total seating capacity. Contains “dual use” provision, which allows smoking in a restaurant after a certain time. No children allowed in smoking area. Smoking allowed in bar establishments. Regulations take effect June 21. Smoking allowed in a separately ventilated, enclosed bar area. Bar seats cannot exceed 25 percent of total seating capacity. No one under 18 is allowed in smoking area. Smoking is allowed in bar establishments, but not in newly constructed, or extensively remodeled areas. Regulations take effect June 1. For restaurants with 50 or more seats, smoking allowed in separately ventilated, enclosed dining rooms. Restaurants with less than 50 seats are self-regulating. Smoking allowed in bar areas separate from dining room. Smoking allowed in bar establishments.

---

---

Indoor air rules to go into effect. - Six counties served by the Mid-Ohio Valley Health Department are posting no-smoking signs and deciding whether to set up no-smoking areas to abide by new indoor air regulations that go into effect Saturday. Businesses in Wood, Wirt, Roane, Calhoun, Ritchie, and Pleasants counties are affected by the rules. Restaurants can either become smoke-free or designate a contiguous area of a certain percentage of seating capacity as a "smoking room." There are specific requirements for the design of those rooms, and no one under 18 can be allowed inside. Smoking areas, however, will be allowed only for three years. As of October 2008, all establishments will be required to be smoke-free. The regulations also prohibit smoking in enclosed public places and private offices in places of employment. Designated smoking areas, if provided, have to be at least 15 feet away from any entrance, exit or ventilation unit of any building or enclosed area where smoking is prohibited.

---

No smoking signs went up around the Mid-Ohio Valley on Saturday as a new indoor air regulation went into effect for six counties. The Mid-Ohio Valley Health Department passed the regulation in July. It covers Calhoun, Pleasants, Ritchie, Roane, Wirt and Wood counties. The regulation says restaurants must either go smoke-free or designate a contiguous area of not more than 25 percent of seating capacity as a smoking room. No one under 18 is allowed inside a designated smoking room. Smoking rooms must be enclosed with separate ventilation systems. The rooms must be equipped with automatic closing doors, which must remain closed except during entrance and exit. The regulations also prohibit smoking in enclosed public places and private offices in places of employment. Designated smoking areas, if provided, have to be at least 15 feet away from any entrance, exit or ventilation unit of any building or enclosed area where smoking is prohibited.

---

"If it's open to the public then the public cannot smoke, and the employees cannot smoke. We're going strictly by the language in the ordinance." City spokesman Chris Mims No smoking here Smoking is prohibited in all enclosed places within the city of Jackson, including, but not limited to, the following places: - Aquariums, galleries, libraries and museums - Areas customarily used by the general public in businesses and nonprofit entities, including but not limited to, professional offices, banks, laundry facilities, hotels and motels - Bingo facilities, when a bingo game is in progress - Convention facilities - Elevators - Facilities used for plays, movies, recitals - Licensed care facilities and hospitals - Lobbies, enclosed hallways, laundry rooms, clubhouses and other common areas in apartment buildings, condominiums, mobile-home parks, retirement facilities, nursing homes and other multiple-unit residential facilities - Polling places - Public transportation facilities - Restrooms, lobbies, reception areas, hallways and other common use areas

---

No-smoking rules - A "smoke-free" establishment prohibits smoking. - An "effectively smoke-free" establishment limits smoking to separately ventilated areas. - An "all smoking area" establishment permits smoking but does not have a designated nonsmoking area. - Small restaurants, establishments that seat less than 50 people, are required to become smoke-free or effectively smoke-free. - Larger restaurants, that seat more than 50 people, taverns and clubs can choose to become entirely smoke-free, effectively smoke-free or all-smoking. - Indoor workplaces that employ 15 or more people are required to be entirely smoke-free or effectively smoke-free. Exceptions include private offices; indoor workplaces operated by a family with only incidental public access; and small indoor workplaces that employ less than 15 people and only incidental public access. SOURCE: Oklahoma Health Department

---

Smoking rules. Under the new smoking rules, restaurants that have a seating capacity of 50 or more must be either "all smoking," "smoke-free," or "effectively smoke-free." Effectively smoke-free means the restaurant must provide a separately ventilated room for smokers to ensure that no smoke enters nonsmoking areas.

---

Rule highlights: \*Required restaurants, bars, pool halls, bingo halls and bowling alleys to be designated as entirely smoking or completely smoke-free, or allow smoking in designated rooms that met ventilation standards. \*Indoor workplaces, including lobbies and areas of public access, would have been required to be smoke-free or have the same ventilation standards as restaurants.

---

---

Until March 1, 2006, restaurants can have designated smoking and nonsmoking areas or can be designated as totally nonsmoking, according to the bill. Beginning March 1, 2006, restaurants will have to be totally nonsmoking or may provide nonsmoking areas and designated smoking rooms. Food and beverages may be served in the designated smoking rooms, under the bill. The smoking rooms must be in a location that is fully enclosed, directly exhausted to the outside, under negative air pressure so smoke cannot escape when a door is opened, and no air can be recirculated to nonsmoking areas of the building, according to the bill. No exhaust from the designated smoking rooms shall be within 25 feet of any entrance, exit or air intake, the bill states. Smoking would be allowed in outdoor seating areas of a restaurant, Robinson said. Robinson has been the principal senator pushing for tougher restrictions on smoking for the past several years.

---

Smoking is banned in state-owned public buildings. A separate smoking room in state-owned public buildings is allowed. State law also prohibits smoking in elevators, indoor movie theaters and other indoor theaters, libraries, art galleries, museums, indoor roller skating rinks of a permanent structure with permanent walls, concert halls, and buses. More about the ban The ban took effect July 1, 2008. PLACES WHERE SMOKING IS BANNED: Bars; restaurants; restaurants' outdoor seating areas; financial institutions; public and private educational facilities; health care provider locations; laundries; schools; public transportation facilities, including buses and taxicabs, and the ticketing, boarding and waiting areas of these facilities; reception areas; aquariums, galleries, libraries and museums; retail food production and marketing establishments; service establishments; retail stores; shopping malls; entertainment venues, including theaters, concert halls, auditoriums and other similar facilities or sports arenas; polling places; convention facilities and meeting rooms; waiting rooms; public buildings and places of public assembly owned, leased or operated by the state; private residences when used as child care facilities or health care provider locations; and child care facilities. PLACES WHERE SMOKING IS ALLOWED: Outdoor areas of bars; veterans organizations, except at functions where the general public is invited; farm tractors and trucks; fairgrounds; designated areas of National Guard facilities; designated areas of correctional facilities; areas of casino gambling; some hotels; tobacco stores; semiprivate rooms in long-term-care facilities; many outdoor areas that are places of employment; most limousine services; and homes, except those used as child care facilities.

---

\* Smoking would be banned in retail stores and offices open to the public. Currently, those places may have a designated smoking area. \* Smoking would be banned in the common areas of motels. Under current law, motels may designate smoking sections in those areas. \* All public transportation, including taxi cabs, would be smoke-free if passengers are present. Current law doesn't restrict smoking in cabs. \* Smoking would be allowed in private clubs and in workplaces that do not cater to the public. \* An establishment that serves both alcohol and food may allow smoking if it caters only to those 21 and older.

---

Also covered are public transportation facilities, including buses and taxicabs, and ticket, boarding and waiting areas of public transit depots as well as lobbies, hallways and other common areas in apartment buildings, condominiums, trailer parks, retirement facilities, nursing homes and other multiple-unit residential facilities with more than four units. The law also bans smoking in places used by the general public, including professional offices, banks, laundromats, hotels and motels. Q: Will the creation of a nonsmoking section allow a business to keep its smoking section? A: No. The entire business needs to be nonsmoking. Q: Can offices keep indoor smoking break rooms? A: No. Smoking is prohibited in any indoor workplace. Q: What about outdoor smoking areas? A: Employers may set up an outdoor smoking area, but it must be physically separated from the enclosed workplace and must be far enough away that smoke cannot migrate into the building.

---

The Westin Providence currently allows smoking only on two floors, a spokeswoman said. Altogether, the Westin chain has 2,400 smoking rooms. They will be given a deep cleaning and air purifying before the Jan. 1 changeover, a spokeswoman said. In Rhode Island, a statewide smoking ban took effect March 1 and prohibits smoking in just about every enclosed public space. The law generally bans smoking in areas used by the general public, including professional offices, banks, laundromats, hotels and motels. Smoking in hotel rooms is allowed as long as a hotel manager wants to allow it in designated smoking rooms. At least half of the rooms in a motel or hotel have to be nonsmoking and a hotel can choose to go completely nonsmoking. Eight Westin hotels were already smoke-free, and at least 5 percent of the rooms at the others had been set aside for nonsmokers, said Sue Brush, a senior vice president at Westin. But market research found that 92 percent of Westin's guests were requesting nonsmoking rooms, and some of those who couldn't get them were "quite upset," she said.

---

---

Smoking will be allowed in some areas, including: \* Businesses for people 21 and older; \* Hotel and motel rooms designated for smokers \* Patios and other open-air areas \* Private businesses with three or fewer employees may have a designated, enclosed smoking area \* Private clubs SOURCE: Non-Smoker Protection Act

---

## E.2 Examples for topic “Enforcement”

---

Judge grants delay in smoking ban challenge August 22, 2003, Friday Kanawha Circuit Judge Charles King agreed Thursday to allow lawyers on each side of a legal challenge to Kanawha County’s smoking ban to delay their case until the state Supreme Court addresses a similar case in Cabell County. The temporary injunction King issued in July will stand. It returned smoking to certain restaurants that serve alcohol to customers. The Kanawha-Charleston Board of Health’s ban prohibits smoking in public places. The regulation went into effect July 2. Portions of the ban were soon halted when King issued a temporary injunction, allowing restaurants and bars that serve alcohol to allow smoking again. Charleston lawyer Ed ReBrook filed the lawsuit on behalf of a St. Albans smoker. The lawsuit alleged the board of health overstepped its boundaries in trying to regulate smoking in private businesses that sell alcohol. ReBrook and Erik Engle, a lawyer for the Board of Health, were granted permission earlier this week to take part in a Cabell County lawsuit challenging the smoking regulation there. The state Supreme Court will hear arguments in that case in October.

---

Health official seeks to apply smoking ban WHEELING - The Wheeling-Ohio County Health Department medical director has filed an injunction to force a club owned by a member of the House of Delegates to comply with the county’s new indoor smoking ban. Dr. William Mercer filed the injunction Friday in Ohio County Circuit Court. A hearing is scheduled at 10:30 a.m. Thursday before Ohio County Circuit Judge Martin J. Gaughan. The petition says the health department has received complaints about the Tropicana Club not obeying the regulation. When it investigated, the department discovered that smoking was allowed inside. Delegate Chris Wakim, R-Ohio, the owner of the club, is not a named defendant. “We’re still expecting people to enforce the regulation,” Mercer said. “The regulation is in effect. I would advise others not to follow one person in not enforcing this.” Wakim has said he has no intention of banning smoking in his club because the nonelected health board has exceeded its authority.

---

BLACKHAWK DOWN; State to close smoker refuge; County to revoke saloon’s health permit The WestVirginia Alcohol Beverage Control Administration is shutting down a Charleston bar that has openly defied Kanawha County’s expanded smoking ban during the past seven months, the bar’s owner said Saturday. Kerry “Paco” Ellison, who owns the Blackhawk Saloon, said ABCA agents notified him early Saturday that the Kanawha-Charleston Health Department intends to revoke the bar’s health permit. Ellison will lose his liquor license without the permit. “Monday morning, they’re seizing my health permit, which essentially shuts me down,” said Ellison, who has encouraged his customers to light up in violation of the smoking ban since the new rules took effect. “I guess I’m guilty until proven guilty.” The Health Department has twice filed misdemeanor charges against the Blackhawk for smoking ban violations. Those charges remain pending in Kanawha County Magistrate Court.

---

Judge’s order temporarily halts state’s new smoking regulations A Creek County judge issued a temporary restraining order Tuesday prohibiting the state Health Department from enforcing smoking regulations in Oklahoma restaurants and indoor workplaces. District Judge Donald D. Thompson set a hearing on a temporary injunction for 10 a.m. Monday in Creek County District Court. The Oklahoma Restaurant Association sought the restraining order when it filed a lawsuit June 27 against the state Board of Health and Gov. Frank Keating, who signed the regulations into law effective July 1. Thompson was out of town then, and the matter shifted to federal court in Tulsa at the request of the Health Department. But a Tulsa federal judge Friday sent the case back to district court. On Tuesday, Thompson ruled that “businesses will be irreparably injured” by enforcement of the rules. While restaurant association representatives hailed the restraining order, Health Department lawyers Tuesday sought a jurisdictional ruling by the 10th U.S. Circuit Court of Appeals in Denver to have the lawsuit heard in federal court in Tulsa instead of in district court in Sapulpa.

---

---

Ban elicits first suits; Cincinnati, Columbus bars focus of complaints alleging violation of workplace smoking ban. The first two lawsuits have been filed against Ohio establishments for violations of the Smoke-Free Workplace Act. The suits were announced Friday, Aug. 14, by Ohio Attorney General Richard Cordray and Ohio Department of Health Director Alvin D. Jackson. Complaints were filed in Hamilton County Common Pleas Court against O'Neal's Tavern in Cincinnati and in Franklin County Common Pleas Court against Zeno's in Columbus. The complaints seek a court order requiring the bars to comply with the state smoking ban. According to court documents, O'Neal's Tavern has been cited for 12 violations with fines of more than \$21,000, and Zeno's has been cited for nine violations and fines of more than \$28,000. "We do take seriously our obligation to enforce Ohio voters' will," said Kristopher Weiss, Ohio Department of Health spokesman.

---

More than 44,000 alleged violations have been reported since enforcement began May 3, 2007. No other suits are imminent, Weiss said. The attorney general's office looks at smoking ban violations on a case-by-case basis, said spokeswoman Kim Kowalski. "If we have additional establishments that violate to the extent that these two have, then yes, we'll have additional suits," she said. Establishments receive a warning letter for their first violation, followed by progressive fines of \$100, \$500, \$1,000 and \$2,500 for subsequent violations, Weiss said. A total of 144 warning letters have been issued to Dayton and Montgomery County establishments through Monday, according to ODH data. Forty-six establishments have been fined once, with 20 being fined twice, seven being fined three times and six being fined four or more times. Ten warning letters have been issued to Warren County establishments, but none were fined. In Miami County, there have been 47 warning letters issued, 16 first fines, seven second fines, three third fines and one case of four or more fines.

---

Ohio smoking ban case may go to state Supreme Court COLUMBUS - A state appeals court has upheld Ohio's statewide smoking ban in a case involving a Columbus bar, Attorney General Richard Cordray announced Wednesday. The ruling is likely going to be appealed to the Ohio Supreme Court. The decision by the 10th District Court of Appeals, based in Columbus, reversed a trial court decision rejecting the state health department's request for an injunction under the smoking ban. The appeals court said that the department is entitled to a permanent injunction ordering the bar to comply with the law because "the evidence is overwhelming that Zeno's (bar) repeatedly and intentionally violated the Smoke Free Act," according to Cordray's office. The state had appealed the ruling from Franklin County Common Pleas Judge David E. Cain, who said that the health department overstepped its legal authority in enforcing the ban against Zeno's bar and tossed out citations that had resulted in \$30,000 in fines. The appeals court also upheld the fines.

---

The first time state officials receive a valid-sounding complaint about a business, they send a letter to the owner, asking for compliance. The state sent out 460 such letters in the first six months of the ban. But only 83 businesses had more than one complaint, sparking a visit from a state inspector or law officer. Complaints, consequences To file a complaint about illegal smoking, go to [www.iowasmokefreeair.gov](http://www.iowasmokefreeair.gov) or call (888) 944-2247. To see a list of bars facing possible license suspension for allegedly violating the ban, go to [www.iowaabd.com/smokefree/hearings.jsp](http://www.iowaabd.com/smokefree/hearings.jsp)

---

Bar owners lose smoking-ban suit. The state has been cleared for now of a challenge by a group of bar owners who contend the ban on smoking in restaurants and bars is unconstitutional. The state has been cleared for now of a challenge by a group of bar owners who contend the ban on smoking in restaurants and bars is unconstitutional. Circuit Judge Sabrina McKenna yesterday dismissed the suit by the Hawaii Bar Owners Association, which argued that the law violates the Constitution because it's too vague. McKenna ruled that the group had the legal standing to bring the challenge, but that it did not show the law is "not a proper exercise of the state's police power." She also said the group could not show the law is unconstitutional because none of its members has been cited for violating the statute. The judge, however, ruled that the group can refile the challenge later.

---

In April, Letters were sent to 13 businesses, including Bilbo's, outlining the violations. In Bilbo's case, the problem was the continued presence of ashtrays and matches, Minagil said. Minagil said Bilbo's was the only business to respond that it would not comply with the health district's requirements. Businesses can be fined if they fail to post 'No Smoking' signs or fail to remove ashtrays and other smoking paraphernalia. Smokers who violate the act are subject to a \$100 civil fine for each infraction. As it stands, Bilbo's faces a \$200 fine for violating the law. But health district inspectors have been out to the West Charleston location this month, and more visits are anticipated. Minagil said the business probably will face a larger fine. "For us, it is a major first step in having a court determine that all of these challenges do not have much validity and that businesses are going to have to comply with the act," Minagil said.

---

---

Judge's Ruling on Smoking Leaves Bar Owner Fuming; Courts: John Johnson, cited for allowing patrons to light up despite ban, is dealt temporary setback in his civil rights suit against city of Westminster. In the first Orange County ruling upholding the new smoking ban, a judge dealt a temporary setback Thursday to a Westminster bar owner fighting to allow his patrons to light up. John Johnson, owner of Lucky John's Too, had ignored the law banning smoking in bars since it went into effect in January. He sued the city after he was cited, claiming the city had violated his civil rights, and had asked the judge to ban Westminster police from citing him again until his case is heard later this year. The judge denied that request. "The judge ruled that it wasn't a rights issue, it was a public health issue," said Marilyn Pritchard of the Orange County Health Care Agency. "She said the intent of the law is clear."

---

THE REGION; Judge Now Says Bar Must Abide by Smoking Ban; Courts: He reverses his ruling that had exempted the tavern and sets a date for trial to proceed. The initial court ruling stemmed from a year-old case in which an employee of Lucky John's on South Euclid Street was cited for smoking in violation of a 3-year-old state law banning smoking in most California businesses and in all of its bars. Lucky John's filed a motion challenging the law as unconstitutional, and in June, Orange County Superior Court Judge Daniel McNerney agreed, ruling that the smoking ban violated guarantees of equal protection by exempting businesses with fewer than five employees except for bars. Prosecutors filed a motion asking McNerney to reconsider his ruling, resulting in Friday's decision. In reversing himself, McNerney set a trial date of Dec. 10 on the original infraction, with a pretrial hearing set for Nov. 30.

---

Sheriff, Clerk Agree To Deal on Smoking [Bob Schwartz] said he brokered the agreement in principle between [Sally Padilla]'s attorney and [Ray Rivera] that will allow Padilla to avoid all criminal charges. A formal written agreement has yet to be completed, he added. When Padilla was issued the Aug. 2 complaint, Rivera wrote in a report that he caught Padilla smoking in her office. "As soon as Mrs. Padilla saw me, she ran toward the exit by the stairs," Rivera wrote in the complaint. "I reminded Mrs. Padilla that it was illegal to smoke in a county building." Official Was Charged With Violating Ban The Sandoval County Sheriff's Department is ready to drop two misdemeanor charges of smoking in a public building that were filed against Sandoval County Clerk Sally Padilla. But if she lights up again in violation of a county ordinance, the charges can be reinstated, according to Deputy District Attorney Bob Schwartz.

---

Under state law, the ABCA can pull the liquor license of any establishment that is in violation of county health regulations. Staples sent letters to about 180 bars and gaming parlors last year saying he would pull the licenses of establishments that continue to allow smoking in violation of the smoking ban.

---

Colorado judge denies delay of smoking ban Lawyers for bar owners and others had asked U.S. District Judge Lewis Babcock to issue a restraining order to delay the ban while they press a lawsuit seeking to overturn the measure. Babcock refused, saying the bar owners were unlikely to win their argument that the ban violates their constitutional rights. His ruling did not affect the lawsuit itself. A federal judge on Friday refused to block a statewide smoking ban from taking effect July 1 despite pleas from bar owners that it will irreparably hurt their businesses. Lawyers for bar owners and others had asked U.S. District Judge Lewis Babcock to issue a restraining order to delay the ban while they press a lawsuit seeking to overturn the measure. Babcock refused, saying the bar owners were unlikely to win their argument that the ban violates their constitutional rights. His ruling did not affect the lawsuit itself.

---

## References (Appendix)

- Benoit, Kenneth, Drew Conway, Benjamin E. Lauderdale, Michael Laver and Slava Mikhaylov. 2016. "Crowd-Sourced Text Analysis: Reproducible and Agile Production of Political Data." *American Political Science Review* 116(2):278–295.
- Collingwood, Loren and John Wilkerson. 2012. "Tradeoffs in Accuracy and Efficiency in Supervised Learning Methods." *Journal of Information Technology & Politics* 9(3):298–318.
- Desmarais, Bruce A, Jeffrey J Harden and Frederick J Boehmke. 2015. "Persistent Policy Pathways: Inferring Diffusion Networks in the American States." *American Political Science Review* 109(2):392–406.
- Greene, Derek and James P. Cross. 2017. "Exploring the Political Agenda of the European Parliament Using a Dynamic Topic Modeling Approach." *Political Analysis* 25(1):77–94.
- Hirschman, Albert O. 1964. "The Paternity of an Index." *American Economic Review* 54(5):761–762.
- Hurrelmann, Achim, Zuzana Krell-Laluhová, Frank Nullmeier, Steffen Schneider and Achim Wiesner. 2009. "Why the democratic nation-state is still legitimate: A study of media discourses." *European Journal of Political Research* 48(4):483–515.
- O'Callaghan, D., D. Greene, J. Carthy and P. Cunningham. 2015. "An analysis of the coherence of descriptors in topic modeling." *Expert Systems with Applications* 42:5645–5657.
- Roberts, Margaret E., Brandon M. Stewart and Edoardo M. Airolidi. 2016. "A model of text for experimentation in the social sciences." *Journal of the American Statistical Association* 111(515):988–1003.
- Warner, Kenneth E. 2000. "The Economics of Tobacco: Myths and Realities." *Tobacco Control* 9(1):78–89.
- Wueest, B., S. Clematide, A. Bünzli, D. Lauppper and T. Frey. 2011. "Electoral Campaigns and Relation Mining: Extracting Semantic Network Data from Swiss Newspaper Articles." *Journal of Information Technology and Politics* 8(4):444–463.