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Smoking Bans and Education in the Mississippi Delta

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Abstract

As awareness of the dangers of secondhand smoke has grown, jurisdictions around the United States have instituted a variety of measures to discourage smoking and to protect non-smokers. In Mississippi, to date, smoking is prohibited by law in state buildings, and various municipal governments have approved prohibitions on smoking in public places, including some in the Delta region in the northwestern corner of the state. Using data from two telephone surveys of 11 Delta counties, the effect of education on both smoking behavior and on support for a comprehensive smoking ban in the respondent's community are assessed. Completing college is associated with substantially lower rates of smoking and substantially higher support for a local smoking ban. The question of whether smoking bans have an educational effect and reduce smoking behavior is also addressed, although a clear link could not be established. Generally, support for smoking bans is strong in Delta counties, with over two-thirds of respondents at all educational levels indicating they favor a local smoking ban.

Keywords: smoking, smoking ban, education, Mississippi Delta

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SMOKING BANS AND EDUCATION IN THE MISSISSIPPI DELTA

Smoking as a Social Problem

Smoking, once the definition of cool and suave, has fallen under heavy fire in the United States and in other western countries. As evidence has mounted that smoking poses serious health risks, not just to smokers but to those who breathe second-hand smoke, a generalized awareness of the dangers has emerged that has translated into public policy to protect the right of non-smokers to breathe uncontaminated air. The most salient of these policies have been outright prohibitions on smoking in public places, forcing smokers out-of-doors and away from building entrances. Around the U.S., many states and municipalities have imposed smoking bans that apply to various venues but generally target workplaces, restaurants and bars.

Individual smokers may suffer from a variety of physical ailments and may find that smoking impedes their ability to make friends with non-smokers, who do not want to breathe second-hand smoke. If smoking is perceived as solely an individual problem, policymakers may be unwilling to intercede to protect the health of anyone willing to engage in a voluntary behavior that has negative effects on their own health. However, according to the U.S. Surgeon General, it is now clear that smoking is far more than an individual problem, since smokers clearly affect those around them, both friends and strangers. When smoking disrupts social functioning, undermining social relationships, institutions and cultural values, then it takes on the status of *social problem*. Social problems affect not only individuals, but also the functioning of society. They generally are inconsistent with or threatening to social values, and they disrupt social goals. Once smoking is perceived as a social problem, there is justification for public policy interventions, such as smoking bans.

The National Context

Since 2006, smoking bans have gained momentum as a policy issue in the state of Mississippi, much as they have in many areas of the United States and other countries. The recent surge in interest followed a report issued in June, 2006 by the U.S. Surgeon General, which unequivocally specified various deleterious effects associated with second-hand smoke (U.S. Dept. of Health and Human Services, 2006). In this document, the Surgeon General reports:

> Today, massive and conclusive scientific evidence documents adverse effects of involuntary smoking on children and adults, including cancer and cardiovascular diseases in adults, and adverse respiratory effects in both children and adults. […] Secondhand smoke is similar to the mainstream smoke inhaled by the smoker in that it is a complex mixture containing many chemicals (including formaldehyde, cyanide, carbon monoxide, ammonia, and nicotine), many of which are known carcinogens. Exposure to secondhand smoke causes excess deaths in the U.S. population from lung cancer and cardiac related illnesses. […] As this report documents, exposure to secondhand smoke remains an alarming public health hazard. Approximately 60 percent of nonsmokers in the United States have biologic evidence of exposure to secondhand smoke. (p. iii)

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Restrictions on smoking and tobacco use have a long history, and the first comprehensive municipal smoking ban in the U.S. dates back to 1990, but after the Surgeon General issued this warning, many states and municipalities moved quickly to institute smoking bans. Since 2006, several Mississippi towns have passed municipal ordinances prohibiting smoking in public places, discussed in detail below.

The Effects of Second-Hand Smoke

Smoking bans serve a variety of purposes and interests, but the primary rationale for instituting a smoking ban is to protect the rights of non-smokers to live free of the negative health effects produced by tobacco smoke. As stated by the Surgeon General, the evidence demonstrates that second-hand smoke has negative health repercussions that can be as bad as those that the smoker faces. According to the Centers for Disease Control and Prevention (CDC) (2010a), second-hand smoke contains at least 250 toxic chemicals, of which at least fifty are known to cause cancer. Regular exposure to second-hand smoke increases the risk for heart disease by 25–30 percent, and increases the risk for lung cancer by 20–30 percent. Second-hand smoke is also linked to various conditions in children, including sudden infant death syndrome, acute respiratory infections, ear problems and asthma. Although exposure to secondhand smoke has decreased since smoking bans were introduced, approximately 88 million non-smokers still are exposed, and children continue to be at higher risk of exposure (Kaufmann et al., 2010).

In addition to the effects of second-hand smoke, smoking itself causes a number of public health problems, including about 443,000 deaths annually, nearly 20 percent of all deaths in the U.S. (Centers for Disease Control and Prevention, 2010b). Smoking is tied to increased risk for a variety of cancers, as well as cardiovascular diseases (e.g. heart attacks, strokes, and aneurysms), respiratory symptoms, and several reproductive and early childhood conditions (e.g. infertility, pre-term delivery, low birth weight). By sending a clear message of public values, smoking bans may have an educational effect on smokers as well, encouraging them not to smoke.

In December, 2010, the Surgeon General issued a report that detailed how cigarette smoke affects smokers and those who breathe secondhand smoke. In this report, the Surgeon General notes:

> This new report also substantiates the evidence that there is no safe level of exposure to cigarette smoke. When individuals inhale cigarette smoke, either directly or secondhand, they are inhaling more than 7,000 chemicals: hundreds of these are hazardous, and at least 69 are known to cause cancer. The chemicals are rapidly absorbed by cells in the body and produce disease-causing cellular changes. This report explains those changes and identifies the mechanisms by which the major classes of the chemicals in cigarette smoke contribute to specific disease processes. In addition, the report discusses how chemicals in cigarette smoke impair the immune system and cause the kind of cellular damage that leads to cancer and other diseases. Insight is provided as to why smokers are far more likely to suffer from chronic disease than are non-smokers (U.S. Dept. of Health and Human Services, 2010, p. iii).

Approaches to Limiting the Effects of Second-Hand Smoke

Reducing exposure to second-hand smoke can be accomplished in a variety of ways. Individual establishments and workplaces can voluntarily impose rules that restrict or prohibit

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smoking; municipalities can pass ordinances that restrict or outlaw smoking in public places within city limits; or state legislatures can issue laws that control smoking in workplaces and/or specified public localities. All of these can be supplemented with public education campaigns that target smokers and encourage youths not to take up smoking; with limitations on the tobacco industry, such as restrictions on advertising practices and rules about who can legally sell or purchase tobacco products; with incentives that encourage smoke-free workplaces and public venues; and with taxes, such as sales taxes on cigarettes, which could produce an economic disincentive to smoking.

In the report cited above, the Surgeon General notes the positive effects of these efforts (U.S. Dept. of Health and Human Services, 2006):

> Fortunately, exposures of adults are declining as smoking becomes increasingly restricted in workplaces and public places. […] Yet compared with data reviewed in the 1986 report, I am encouraged by the progress that has been made in reducing involuntary exposure in many workplaces, restaurants, and other public places. These changes are most likely the major contributing factors to the more than 75 percent reduction in serum cotinine levels that researchers have observed from 1988 to 1991. However, more than 126 million nonsmokers are still exposed. We now have substantial evidence on the efficacy of different approaches to control exposure to secondhand smoke. Restrictions on smoking can control exposures effectively, but technical approaches involving air cleaning or a greater exchange of indoor with outdoor air cannot. Consequently, nonsmokers need protection through the restriction of smoking in public places and workplaces and by a voluntary adherence to policies at home, particularly to eliminate exposures of children (p. iii).

Mississippi has undertaken several educational efforts. During the 2007 legislative session, for example, the state legislature created the Mississippi Tobacco Control Advisory Board, which coordinates state efforts to control and educate the public on tobacco use and cessation (Mississippi Legislature, 2007). Among the goals specified in the legislation:

> (a) Preventing the initiation of use of tobacco products by youth;
> (b) Encouraging and helping smokers to quit and reducing the numbers of youth and adults who use tobacco products;
> (c) Assisting in the protection from secondhand smoke;
> (d) Supporting the enforcement of laws prohibiting youth access to tobacco products;
> (e) Eliminating the racial and cultural disparities related to use of tobacco products; and
> (f) Educating the public and changing the cultural perception of use of tobacco products in Mississippi (p. 29).

In the spring of 2009, the state legislature approved a 50 cent per pack increase in taxes on cigarettes, the first such increase in 24 years (Associated Press, 2009). However, even with this increase, cigarette taxes in Mississippi remain well below the national average. In fall, 2010, the Mississippi Department of Health launched a campaign to educate the public about the dangers of second-hand smoke (Byrd, 2010). Mississippi also has a number of smoking bans in place.

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Smoking Bans in Mississippi

In 2000, the Mississippi Legislature passed a smoking ban in state buildings (Mississippi Legislature, 2000). Bills to extend this ban to workplaces and other public areas such as bars and restaurants have been introduced in the legislature each year since 2002, but have failed. Most recently, in early 2011, the state Senate considered a comprehensive smoking ban, but approved a watered down version that applied only to state buildings, slightly modifying the existing state ban (Crisp, 2011; Hess, 2011). The bill was being considered by the House Public Health and Human Services Committee at the time this article went to press (Mississippi Legislature, 2011).

In the absence of a comprehensive statewide law, the state has relied primarily on voluntary efforts and municipal ordinances to address concerns about secondhand smoke. Some restaurants and workplaces have voluntarily imposed smoking restrictions, including a handful of locales in the Delta region. The Mississippi Department of Health maintains a list of smoke-free restaurants in the state (See http://www.msdh.state.ms.us/msdhsite/_static/43,0,94,245.html).

In 2002, the Delta town of Metcalfe in Washington County instituted the state's first comprehensive municipal smoking ban, covering workplaces, restaurants and bars. Mayersville, another Delta town located in Issaquena County, passed a smoking ban in 2005. In 2006, influenced by the report from the Surgeon General, Starkville became the first city in the state to impose a comprehensive municipal smoking ban (Ward, 2006). Several other cities followed suit, and by the end of 2007, Tupelo, Mantachie, Oxford, Hattiesburg, Hernando, Aberdeen, Ridgeland, Madison, Kosciusko, Amory, Corinth and Flora had passed anti-smoking ordinances (ANRF, 2010). In the Delta region, Greenwood was the first city to pass a smoking ban, in August, 2007 (Associated Press, 2007; Darden, 2007), followed by Greenville in October, 2007. Other Delta localities to institute smoking bans include Walls in 2008 and Hollandale in 2009 (ANRF, 2009; Byrd, 2010). As of October 1, 2010, 37 municipalities in the state had a smoke-free ordinance that banned smoking in workplaces, restaurants, and/or bars (ANRF, 2010).

Smoking Bans and Education

Smoking bans can be linked to education in a variety of ways. By chasing smokers outdoors, smoking bans make indoor air cleaner, but they may also have added educational benefits by encouraging smokers to quit and non-smokers not to start. Also, educational institutions that impose restrictions on tobacco may teach young people not to take up smoking. Finally, educational attainment may be correlated with support for smoking bans, and a more educated public builds a political climate that is conducive to anti-smoking legislation.

Smoking Bans as Educational Tools

There is some evidence that smoking bans have an educational effect in that they decrease the likelihood people will smoke. Gallus et al. (2006) studied the effects of a smoking ban instituted in Italy in January, 2005 and found an 8 percent decline in cigarette consumption following the ban. They note that these results support the 8 percent decrease in sales observed in Ireland following the imposition of a smoking ban there, as reported in *Lancet* ("Ireland's smoking ban," 2005). Siegel, Albers, Cheng, Biener, and Rigotti (2005) used longitudinal data to study whether restaurant smoking bans in Massachusetts communities had an effect on youth

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taking up smoking. They found that in towns with strong bans on smoking in restaurants, youths took up smoking at a significantly lower rate (4.9 percent) than in towns with medium (8.2 percent) and weak (8.0 percent) smoking regulations in restaurants. Tang, Cowling, Stevens, and Lloyd (2004) also used a longitudinal design to compare preferences of bar workers immediately following a smoke-free law, and four years later. They found significant increases in preference for working in a smoke-free environment, concern about the effects of second-hand smoke, and willingness to confront patrons who were smoking. McMullen, Brownson, Luke, and Chriqui (2005) found that clean indoor air laws were associated with reduced youth smoking rates, but did not have a significant effect on adult smoking rates. Wakefield et al. (2000) found that smoking bans in public places reduced smoking in youth, primarily by discouraging experimenters from becoming established smokers. Restrictions in public places were also associated with lower rates of smoking. Farkas, Gilpin, White, and Pierce (2000) found that living in a smoke-free household and/or working in a smoke-free workplace had significant effects on adolescents' propensity to smoke, reducing the rate of initiation and of quitting smoking.

Other studies call into question the educational effects of smoking bans. Reports around the time the United Kingdom imposed smoking restrictions suggest the bans might lead to decreases in smoking, based on the reported intentions of smokers (Paton, 2007; "Ireland's smoking ban," 2007). Whether smokers will actually be able to quit is questionable, however. Albers, Siegel, Cheng, Biener, and Rigotti (2007) studied smoking regulations in Massachusetts and found that strong smoking bans were associated with an attempt to quit smoking, but not associated with actually quitting. In a legal article, Lambert (2006) argues that smoking bans may produce the opposite effect than intended. Without considering empirical evidence, Lambert argues that:

> Sweeping smoking bans may actually increase the incidence of smoking. A large percentage of smokers acquire the habit at a young age, and they frequently do so because smoking is "cool." Smoking is cool, of course, because it is rebellious. The harder anti-smoking forces work to coerce people into quitting smoking, and the more they engage the government and other establishment institutions in their efforts, the more rebellious—and thus the "cooler"—smoking becomes. Even advocates of the use of smoking regulation to alter social norms acknowledge that overly intrusive regulations may result in this sort of "norm backlash." As an empirical matter, then, it is not clear whether sweeping smoking bans—highly intrusive regulatory interventions—actually reduce the incidence of smoking in the long run (p. 37).

Smoking Bans at Mississippi Colleges

Over the past few years, more than 365 campuses around the country have gone completely smoke free (Cruz, 2009; Jullian, 2008; Ross, 2008). Many do so at least in part with an educational mission, to "model" healthy behavior and to create a culture of non-smoking. It is clear that some educators believe that it is the responsibility of educational institutions to try to reduce smoking among students, and that banning smoking on campus can achieve this goal.

Among the communities in Mississippi that have imposed smoking bans, several are home to Mississippi's colleges and universities, including Starkville (Mississippi State University), Oxford (University of Mississippi), and Hattiesburg (University of Southern

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Mississippi). In addition, some Mississippi campuses have imposed their own smoking bans. Public universities already forbid smoking indoors, as part of the ban on smoking in state buildings passed in 2000. However, in addition, the University of Mississippi (2009) instituted a policy in September, 2007 that limits use of tobacco to designated areas on campus (Crisp, 2010). Delta State University (2010) has banned tobacco completely on campus, as of September, 2010 (Jones, 2010). Both University of Mississippi and Delta State University ban not just smoking, but tobacco use of any kind, suggesting its intent is not simply to protect the rights of non-smokers by avoiding exposure to second-hand smoke, but also to set a moral and educational standard for students regarding use of tobacco products. Smoking bans on college campuses are relatively recent, and systematic studies to assess whether they reduce smoking have not been done.

Educational Achievement and Support for Smoking Bans

In general, studies of attitudes about smoking bans find most people support anti-smoking legislation (Feigelman & Lee, 2006; Torabi & Seo, 2004), although social context does affect public opinions. For example, in a Kentucky county heavily dependent on the tobacco industry, most respondents supported some form of control on tobacco use in public places, but only 26.3 percent supported an outright ban on smoking in restaurants (Wilson, Duncan, & Nicholson, 2004).

Does educational achievement affect support for smoking bans? Ferketich et al. (2010) studied local smoking bans in the Appalachian region of six states, including Mississippi, and found that most of the population was not adequately covered by smoke-free legislation; however, communities with higher levels of education were more likely to have strong smoke-free ordinances. Torabi & Seo (2004) surveyed Indiana residents, and found that those with lower levels of education were more likely to oppose a smoking ban in bars and restaurants, while Seo (2005) found Indiana respondents with lower education were more likely to oppose a smoking ban on drivers, though not passengers, in motor vehicles. In a Kentucky sample, Roseman (2005) found respondents with more education indicated they would eat out more often if smoking were banned in restaurants, while those with less education would eat out less often. In a survey of Mississippi residents, those with a college education were more likely to support banning smoking in restaurants, shopping malls and convenience stores than those with less education, although support for smoking bans in bars and taverns did not differ significantly by

Research Methods

Research Questions

This study addresses two questions that pertain to the relationship between education and smoking bans. First, what effect does level of educational achievement have on attitudes about smoking bans? Second, do smoking bans have an educational effect, by reducing the incidence of smoking?

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Methods

This study uses survey data to assess the relationship between education and smoking. First, results from a survey conducted in 2009 assess the effects of educational achievement on support for smoking bans. Second, county-level data assess the effects of a smoking ban in the largest cities in two counties on smoking behavior in the county. Data from before (2007) and after (2009) the smoking bans were instituted are used, and comparisons are drawn to surrounding counties with similar characteristics and no smoking ban, which serve as control cases.

Study Location, Data Source and Data Analysis

Data for this study were drawn from telephone surveys of eleven Mississippi Delta counties conducted in 2007 and 2009. The eleven counties include Bolivar, Coahoma, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica and Washington. Subjects for these surveys were chosen using random digit dialing to reach a household, and then a random-selection technique to identify an adult in the household as respondent (Barton, 2007a). Data were collected by the Survey Research Unit at Mississippi State University.

The first survey was conducted in January, 2007, and consisted of interviews with 1,005 randomly selected adults (SSRC, 2007). A total of 5,847 randomly selected numbers were dialed, of which 1,087 were answered and screened. Among those that completed the screening process to select a respondent, 82 refused to participate. Among those that did not complete the screening process, 1,945 resulted in no response (e.g., no answer, answering machine, or the person responding refused to participate before screening), 2,717 were ineligible (e.g., disconnected number, respondent was away or unable to participate due to a health problem), and 98 required callbacks but could not be completed during the data collection period. The sampling error for the data set was less than ±3.1 percent with a 95 percent confidence interval.

The second survey was completed in January, 2009, and interviews were conducted with 1,144 respondents (SSRC, 2009). Of 6,581 randomly selected numbers, 1,688 were answered and screened. Among those that completed the screening process, 544 refused to participate in the survey. Among those that did not complete the screening process, 1,481 had no response, 2,920 were ineligible, 389 callbacks could not be completed, and 103 calls were interrupted due to a communication problem.

The 2007 survey was conducted approximately six months after the Surgeon General's report was issued. At the time, municipal smoking bans were gaining attention as a public policy issue in Mississippi, and the smoking bans in Greenwood and Greenville were instituted ten months and eight months after the first survey, respectively. The second survey was conducted approximately 16 months after the Greenwood ban and 14 months after the Greenville smoking ban went into effect.

Prior to analysis, data were weighted using the 2000 U.S. Census as a base, in order to adjust for systematic discrepancies by county, particularly in the gender of the respondents. Data were categorical and were analyzed using frequency distributions, contingency tables and, where appropriate, chi-square (X^2) tests of significance.

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Table 1
Demographic Characteristics of Respondents

Response Category	2007 (Percent)	2009 (Percent)	Response Category	2007 (Percent)	2009 (Percent)
Age of Respondent			**Educational Attainment**		
18 – 29	10.9	11.4	Did Not Finish High School	27.4	24.4
30 – 44	20.1	20.8	High School Diploma	25.0	24.1
45 – 59	32.9	32.9	Some College	23.0	26.3
60 – 74	22.4	23.5	Bachelor's Degree or Higher	23.2	25.0
75+	13.7	11.5	**Employment Status**	**(2006)**	**(2008)**
Gender of Respondent			Employed (FT or PT)	55.8	58.6
Female	53.8	53.9	Not Employed	44.2	41.4
Male	46.2	46.1	**Annual Household Income**	**(2006)**	**(2008)**
Race of Respondent			More Than $60,000	15.1	17.1
Black/African American	62.7	57.5	From $30,000 to $60,000	20.9	26.9
White/Caucasian	36.6	36.6	Less Than $30,000	64.0	55.9
Other	0.7	5.8	**Length of Time in Same Community**		
Marital Status of Respondent			More Than 50 Years	19.9	15.9
Currently Married	46.0	46.6	20 to 50 Years	40.5	41.8
Single/Previously Married	27.6	30.9	5 to 20 Years	26.8	27.3
Single/Never Married	25.5	22.3	Less Than 5 Years	12.7	14.9
Source: 2007 and 2009 telephone surveys of eleven Mississippi Delta counties; weighted data					

Respondents

Table 1 (above) shows demographic characteristics of respondents to the two surveys, after weighting. The age distribution was normal, and slightly more than half the respondents were female. The majority of the respondents were African American and just over one-third were white, which represents the population of the Mississippi Delta accurately. Slightly less than half indicated they were currently married. Respondents were distributed fairly equally by educational achievement, with roughly one-fourth in each category: did not finish high school, graduated from high school, some college and college graduate. Over half the respondents were employed during the year prior to the survey, either full- or part-time. Indicative of the region's high rate of poverty, over half of the respondents earned less than $30,000 in household income the year prior to the survey, while about 16 percent earned over $60,000. Over 85 percent of the respondents had lived in their current community for more than five years, and nearly three-fifths of the respondents had lived in the same community for more than twenty years.

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Smoking Habits in the Mississippi Delta

According to the Centers for Disease Control, 23.3 percent of adults in Mississippi are current smokers, compared to 20.0 percent nationally (Centers for Disease Control and Prevention, 2010c). Data from the survey of eleven Mississippi Delta counties show a lower rate of smoking among Delta residents; in 2009 17.6 percent of the respondents said they were current smokers. Males (24.2 percent) indicated they smoke at over twice the rate of females (11.9 percent), and white respondents (19.4 percent) said they smoked at a higher rate than African Americans (15.8 percent). However, when race and gender are compared together, it is clear that a relatively low rate of smoking among African American females accounts for these differences. Among white respondents, 19.1 percent of males and 19.7 percent of females said they smoke. Among African American respondents, 25.2 percent of males, but only 7.8 percent of females said they smoke.

Education and Smoking

In Mississippi, among those who have not completed high school, 26.0 percent are smokers, while 21.1 percent of high school grads smoke, 17.9 percent of those with some college smoke, and only 8.8 percent of college graduates smoke (Mississippi Tobacco Data Workgroup, 2008). Survey data from 2009 show that education has a significant effect on smoking behavior in the Delta (X^2 = (3, = 15.6, p <.05 this needs more editing—did the best I could, although there is not as clear a trend as in the statewide data. In the Delta, 19.9 percent of those who have not completed high school smoke, while 20.5 percent of those with a high school diploma are smokers, 20.1 percent of those with some college smoke, and only 9.9 percent of college graduates are smokers. In the Delta, there is a sharp difference in smoking behavior between those with a college degree and those without.

When asked if they would support or oppose an ordinance prohibiting smoking in all public places in their community, including restaurants and bars, over two-thirds (67.0 percent) of the respondents in eleven Delta counties said they would support such a ban. Over one-third (37.4 percent) said they *strongly* favor a municipal ordinance banning smoking. By contrast, about one-quarter (25.9 percent) oppose a smoking ban, and less than one in ten (8.1 percent) indicated they strongly oppose such a measure. The percentage of Delta residents who favor smoking bans is lower than a statewide survey in Mississippi, which found 73.4 percent of Mississippians support smoke-free ordinances for indoor work areas and 72.0 percent support smoke-free regulations for restaurants (McMillen & Valentine, 2005).

Education and Support for Smoking Bans

Support for smoking bans varies by education, and as with smoking behavior, there is a clear difference between those who completed college and those who did not (See Table 2). Among those who lack a high school degree (24.4 percent of the sample), 66.0 percent favor smoking bans, while 71.9 percent of high school graduates (24.0 percent of the sample) and 69.3 percent of those with some college, including an associate's degree (26.6 percent of the sample) support no smoking ordinances. However, among those with a bachelors degree or higher (25.0

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percent of the sample), 80.5 percent said they favor a smoking ban. This is a statistically significant difference (X^2 (3, = 15.0, $p < 0.01$).

There is some variation in strength of support for smoking bans. Among those with a high school diploma or less, fewer than one in five (19.8 percent) strongly support smoking bans, while more than two in five (42.3 percent) of those with a college degree strongly support smoking bans. Nearly two in five (39.4 percent) of those with a high school diploma, and about one-quarter (25.8 percent) of those with some college strongly support smoking bans. In general, strong opposition to smoking bans is low, although it is lowest among those that did not finish high school (5.3 percent) and those with a college degree (6.7 percent), and slightly higher among those with a high school diploma (9.2 percent) and those with some college (13.7 percent). When accounting for strength of support, the differences again are statistically significant (X^2 (9, = 66.4, p < 0.01.

Table 2
Opinion on Smoking Bans by Educational Achievement, 2009

Response Category	Strongly Favor	Favor	Oppose	Strongly Oppose
Opinion on an Ordinance Prohibiting Smoking in All Public Facilities in Respondent's Community				
Did Not Finish High School	19.8	46.2	28.6	5.3
	66.0		34.0	
High School Diploma	39.4	32.5	18.9	9.2
	71.9		28.1	
Some College	25.8	43.5	17.0	13.7
	69.3		30.7	
Bachelor's Degree or Higher	42.3	38.2	12.7	6.7
	80.5		19.5	
Source: 2009 telephone surveys of eleven Mississippi Delta counties; weighted data				

Effects of Smoking Bans on Smoking Behavior

Have the smoking bans in Greenwood and Greenville affected smoking behavior? The data presented here are general and can only be considered anecdotal. Table 3 shows changes in smoking behavior between 2007 and 2009 by county. While the data show a decrease in smoking in some counties, they data do not show a clear educational effect of the Greenwood and Greenville smoking bans. Smoking decreased substantially in Leflore County, where Greenwood is located, from 20.5 to 15.5 percent of respondents, suggesting the smoking ban had at least some effect. However, Washington County, where Greenville is located, did not show the same effect; the percent of respondents who smoke remained stable, 19.3 percent in 2007 and 19.0 percent in 2009. Moreover, in Bolivar County, which does not have a smoking ban (except for the prohibition on the Delta State campus, imposed after the 2009 survey), smoking declined even more than in Leflore County, while other surrounding counties remained relatively stable.

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The lightly populated counties in the South Delta show a substantial increase in smoking, although some of this fluctuation is likely a result of a small sample size in these counties.

Table 3:
Change in Smoking by County, 2007 to 2009

Response Category	**2007 (Percent)**	**2009 (Percent)**
Currently Smokes Tobacco		
Northeast Delta (Tunica, Tallahatchie, Quitman)	22.7	21.6
Coahoma	16.1	17.1
Bolivar	21.2	15.3
Sunflower	15.6	13.0
Leflore	20.5	15.5
Washington	19.3	19.0
South Delta (Issaquena, Sharkey, Humphreys)	13.7	24.4
Source: 2007 and 2009 telephone surveys of eleven Mississippi Delta counties; weighted data		

Conclusions and Recommendations

While evidence is accumulating that smoking bans have positive effects on health, clear cut evidence that demonstrates the linkages between education and smoking bans remains elusive. In the Mississippi Delta, it is clear that educational attainment influences one's opinion on smoking bans as public policy, with the strongest support among those with a college education. Nevertheless, at least two-thirds of the respondents at all educational levels expressed support for smoking bans, and at least one quarter of respondents with a high school diploma or higher indicated strong support for smoking bans. Generally, in surveys of this nature, those who state that they strongly support a policy goal are reasonably likely to take some action to advance the goal.

It is less clear whether smoking bans serve an educational purpose and reduce smoking. Smoking declined in one county following a ban, but did not in another county; moreover, smoking declined in a comparison county with no ban, and did not in other comparison counties with no bans. While some of the studies cited above showed a short-term effect of a smoking ban (Gallus et al., 2006), the evidence in this study could not replicate those results. Perhaps more time is necessary for the educational effects of a smoking ban to emerge in survey data. Or perhaps the results presented here are representative of the variation observed in the educational effects of smoking bans. Some studies have suggested that the way a smoking ban is written influences its effectiveness, as do external variables in the community where the smoking ban is instituted (Siegel, et al. 2005; Wilson, et al. 2004). Not everyone in Greenwood supported the smoking ban, but the city council passed it unanimously (Darden, 2007), while in Greenville the vote was tied and required the mayor to cast the tie-breaking vote (Barkhorn, 2007). In general,

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the Greenville ban provoked more local controversy, and while the local chamber of commerce supported it, some businesses opposed it. Perhaps the local attitudes affect how effective a smoking ban is in convincing a smoker to quit.

Local and state lawmakers have a variety of tools at hand to influence public behavior. Prohibiting smoking through coercive means such as local ordinance or state law has been successful elsewhere, but this does not guarantee success in the Delta. Although survey respondents express substantial support for municipal smoking bans, many Delta residents are resistant to excessive government regulation, and the potential for a backlash does exist if a policy is imposed and strictly enforced. In Ridgeland, MS, a smoking ban initially spurred strong opposition and a lawsuit from a relatively small restaurant and bar sector, demonstrating the animosity that can occur. Given the dangers to the general public posed by second-hand smoke, however, coercive regulation is justified but can be enhanced if combined with incentives, education, targeted accommodations to accomplish well-defined purposes, and other approaches to controlling the atmosphere at public venues. Care must be taken to craft legislation that is locally appropriate, and to build a political constituency so that a smoking ban can be implemented smoothly. Many states have overridden local control by imposing a statewide ban. In a February 4, 2008 editorial, the *Clarion Ledger* in Jackson recommended a statewide ban, saying:

> The cost [of smoking] to Mississippi in tax dollars, lives and misery is undisputed. It's time for lawmakers to take a deep breath for cities, stop blowing smoke and pass a state smoking ban. (Clarion Ledger, 2008)

A statewide ban does not address local variation in attitudes and preferences. But, given the support of both the public and public officials for smoking bans, and given the evidence that second-hand smoke causes substantial harm, it is clear that generalized arguments that defend the private property rights of business owners and denounce government interference with private enterprise are increasingly difficult to sustain, in the face of the strong public health interest that is being protected.

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