

**Attitudes: Assessing Changes in Attitudes Regarding the Indoor Public Smoking Ban in
San Marcos, Texas**

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Applied Research Project

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Abstract

Purpose. The purpose of this study is to assess changes in attitudes regarding the indoor public smoking ban implemented in San Marcos, Texas on June 1, 2014. **Method.** Survey Research was the method used in this study. Surveys were distributed by hand to bar patrons, employees, and owners asking their opinions on issues related to the hypotheses of this study. **Results.** Among employees/owners the level of support for the ban increased after it was implemented. The findings also show that a public indoor smoking ban does not negatively affect bar revenues. Among employees/owners there was no significant difference in the level of support between smokers and nonsmokers prior to the ban but smokers did become more supportive following its implementation. Among patrons, attitudes regarding the ban improved after its implementation. Following the ban's implementation, differences in gender and race were not significant predictors regarding level of support but education level was significant with those having higher levels of educational attainment being more supportive. **Conclusion.** Without the existence of a smoking policy; employees/owners tend to simply accept the status quo. They accept the fact that there is no smoking policy and are indifferent to the proposal of a smoking policy. Smoking addiction also perhaps plays a role in the continued level of nonsupport among smokers. Educational attainment also plays a role in the acceptance of public indoor smoking bans with those having more education becoming more supportive after the ban's implementation.

About the Author

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Chapter 1

Introduction

It is now well documented that cigarette smoking is dangerous to one's health. The 1964 Surgeon General's report found a causal relationship between smoking and lung cancer in men followed by the 1972 Surgeon General's report that addressed the issue of secondhand smoke exposure. The 1986 Surgeon General's report again addressed the issue of involuntary smoke exposure and was dedicated entirely to the topic. The 2006 Surgeon General's report reiterated these findings. The 2014 Surgeon General's report entitled "50 Years of Progress" offered a comprehensive view of the progress made since the issuance of the 1964 report first addressing the topic.

Tobacco use in the world began thousands of years ago (U.S. Department of Health and Human Services 2014, 17). Smoking is and has been a popular pastime for millions in the United States and it is unlikely for the practice to stop soon. The debate over the health consequences of smoking in the United States has been going on now for over fifty years and the battle is not over. Individuals continue smoking and both smokers and nonsmokers continue dying despite the abundance of information regarding its inherent dangers.

Why do people continue to risk their health despite 50 years of evidence demonstrating the dangers of smoking? It is at least in part due to the tremendous efforts of the tobacco industry trying to thwart efforts to undermine their multibillion-dollar industry. Following the issuance of the 1964 Surgeon General's report, cigarette consumption in the United States began to decline as smoking became more unacceptable. The tobacco industry fought back increasingly hard in an effort to dissuade the public from accepting information demonstrating smoking as a dangerous activity. The tobacco industry used deceptive practices such as increasing levels of nicotine in cigarettes in order to keep the public addicted. These practices resulted in the landmark 2006

lawsuit *United States vs. Phillip Morris*. This suit resulted in the tobacco industry being found guilty of violating civil racketeering laws for lying to the public regarding the dangers of smoking. The tobacco industry is the only legal industry ever convicted under federal racketeering statutes (U.S. Department of Health and Human Services 2014, 32).

Research Purpose

Today, approximately 20% of adults in the United States are smokers. This is a great improvement from 1964 when the adult smoking population was at 40%. At the time of the writing of the 2014 Surgeon General's report 81% the population of the United States lived in municipalities with some sort of workplace smoking restrictions at least at the non-hospitality level (U.S. Department of Health and Human Services 2014, 33).

How do smoking bans affect municipal populations? Do they increase local support or alienate the public? The purpose of this research is to assess changes in attitudes among bar owners/employees and patrons regarding the public indoor smoking ban implemented on June 1, 2014, in San Marcos, Texas. "The San Marcos smoking ordinance prohibits smoking in the enclosed areas of public places and workplaces, outside within 10 feet of entrances and windows and on City-owned or rented property, including parks, City facilities, City Hall and sports venues" (City of San Marcos, 2015).

Chapter 2

Literature Review

The 1964 United States Surgeon General's report established a causal relationship between lung cancer in men and cigarette smoking (U.S. Department of Health and Human Services 1964, 31). In the 50 years following the report, twenty million Americans died of premature deaths as a consequence of smoking, either through direct inhalation or passive secondhand exposure. This is ten times greater than the number of Americans killed in all of our nation's wars combined (U.S. Department of Health and Human Services 2014, 17).

For the last thirty years, the nation has enjoyed an overall decline in tobacco consumption (U.S. Department of Health and Human Services 2014, 20). This decline is associated with changes in attitudes and perceptions towards smoking policies. Considering the health implications associated with smoking, it is important to monitor shifts in attitudes as they relate to smoking policy. Policies viewed favorably by the public are likely to be more successful.

The purpose of this chapter is to review the scholarly literature relating to shifts in attitudes among bar owners/employees, and patrons towards indoor public smoking bans before and after their implementation. First, a brief history of tobacco use in the United States during the 20th century leading to the implementation of indoor public smoking bans is reviewed. Second, conditions in bars as they relate to tobacco smoke exposure are discussed. Third, shifts in attitudes among bar owners/employees, and patrons as they relate to indoor public smoking bans will be examined. This examination will help develop hypotheses useful in assessing shifts in attitudes among similar groups of individuals in different municipalities.

The 20th century is referred to as the "cigarette century" (U.S. Department of Health and Human Services 2014, 19). The peak of smoking in this century occurred in the early 1960s,

resulting in the 1964 Surgeon General's report. At this time, 40% of Americans were regular smokers (U.S. Department of Health and Human Services 2014, 17). In the 60 years prior to the Surgeon General's report, smoking enjoyed wide acceptance amid a consumer culture taking advantage of new technologies in mass production and advertising (U.S. Department of Health and Human Services 2014, 19). Hostility to smoking did exist but in the first decades of the 20th century this opposition largely focused on the moral and social impact of smoking on vulnerable classes of individuals instead of focusing on the health consequences associated with smoking (U.S. Department of Health and Human Services 2014, 21). It wasn't until an increase in lung cancer cases gave rise to additional research that the focus shifted to the association between smoking and poor health. Studies conducted as early as the 1920s showed a strong association between lung cancer and tobacco smoking. Follow-up studies in the 1940s and 1950s confirmed the earlier findings leading to the 1964 Surgeon General's report that demonstrated a causal relationship between smoking and lung cancer in men (U.S. Department of Health and Human Services 2014, 20). Despite the availability of information outlining the danger of smoking, tobacco consumption rates did not initially decrease. The lack of change in tobacco consumption rates stemmed from the tobacco industry's attempts to discredit the scientific community's evidence that smoking is harmful. Starting in the 1950s with the creation of institutions such as the Tobacco Industry Research Committee (TIRC), the tobacco industry embarked on a decades long campaign to subdue efforts by the scientific community to show the harms of smoking (U.S. Department of Health and Human Services 2014, 20).

It was not until the early 1970s that the focus shifted away from the effects of smoking on individual smokers and was redirected to the effects of secondhand smoke on nonsmokers and the need for smoking policies that ban smoking in certain locations. In 1971, the Surgeon

General Jesse L Steinfeld commented, "It is high time to ban smoking from all confined public spaces such as restaurants, theaters, airplanes, trains, and buses" (U.S. Department of Health and Human Services 2014, 26).

In 1974, Connecticut became the first state to restrict smoking in restaurants (U.S. Department of Health and Human Services 2014, 27). As this trend continues with municipalities now passing complete citywide indoor public smoking bans, it is increasingly important to monitor these policies to ensure they are effective at meeting the public's needs, not just in terms of providing a healthy environment but also in gaining acceptance within a community. The research so far suggests that where smoking is considered an unacceptable behavior, fewer people will smoke (U.S. Department of Health and Human Services 2014, 26).

Bars and Environmental Tobacco Smoke

The 1972 U.S. Surgeon General's report first addressed the issue of secondhand smoke. It came eight years after the 1964 U.S. Surgeon General's report addressing the health consequences of active smoking. The 1972 report confirmed that "non-smokers inhale a mixture of sidestream smoke given off by a smoldering cigarette and mainstream smoke exhaled by a smoker." These smoke levels increase when smoking occurs in enclosed spaces (U.S. Department of Health and Human Services 1972, 119). Specifically, the 1972 report focused on the levels of carbon monoxide produced by cigarettes and found that levels in enclosed spaces could exceed levels permitted in outdoor air. The report concluded, "An atmosphere contaminated with tobacco smoke can contribute to the discomfort of many individuals" (U.S. Department of Health and Human Services 1972, 139).

The year 1986 represented a landmark concerning the health consequences of involuntary smoking. The entire 359 page Surgeon General's report indulged this topic. It reached a damning

conclusion, based on twenty years of empirical research on both active and involuntary smoking. It stated, "Involuntary smoking is a cause of disease, including lung cancer, in healthy non-smokers" (U.S. Department of Health and Human Services 1986, 7).

Bars remain a focal point for exposure with bar employees having high levels of exposure to environmental tobacco smoke (Biener 1997, 2042). Single room bars report levels of exposure ten times higher than multi-room bars. Hair samples of non-smoking bar workers show nicotine concentrations similar to those of smokers suggesting environmental tobacco smoke as a likely cause (U.S. Department of Health and Human Services 2006, 9). Several policy measures including "segregating smokers in smoking sections and attempting to remove environmental tobacco smoke through air cleaning or mechanical exchange achieve only limited success" (U.S. Department of Health and Human Services 2006, 11). Voluntary control practices to restrict smoking also achieve low levels of compliance (James 1999, 65)

In 2006, the Surgeon General again dedicated its annual report to the topic of involuntary smoke exposure. The report reached over fifty conclusions concerning the adverse effects of exposure to environmental tobacco smoke. These conclusions demonstrated there are more than fifty different carcinogens present in environmental tobacco smoke. The report also concluded there is enough evidence to suggest a causal relationship between environmental tobacco smoke and lung cancer among lifetime non-smokers and that there is no risk-free level of exposure (U.S. Department of Health and Human Services 2006, 12).

The report recommended total indoor smoking bans as the best solution. "A total ban on indoor smoking substantially reduces environmental smoke exposure, up to several orders of magnitude with incomplete compliance, and with full compliance, exposures are eliminated" (U.S. Department of Health and Human Services 2006, 16).

California became the first state to implement a statewide smoking ban in the workplace with the adoption of assembly Bill 13 in 1994. Four years later, on January 1, 1998, a provision of the law effectively banned smoking in all bars throughout the state (Tang 2003, 87). By the year 2000, thirty-two states restricted smoking in restaurants (Dunham 2000, 326).

In the first decade of the 21st century, smoking bans expanded greatly with over 3,100 new bans implemented within the United States. This represents a huge growth from the 18 total bans enacted in the decade of the 1970s. "By the end of October 2007, 11,305 municipalities in the United States were covered by 100% smoke-free laws" (Sanders-Jackson 2013, 8). This includes the Smoke Free Illinois Act that became effective in January 2008. It bans smoking in places of employment, government vehicles, and all public places, including casinos (Polinsky 2014, 6). Also included is the indoor public smoking ban that took effect in Austin, Texas in 2005. This ordinance banned smoking in all public spaces including bars and restaurants (Waring, 2007, 260). The remaining discussion regards how attitudes towards public smoking bans change as more bans come on line.

Attitudes of Bar Owners/Employees

Bar owners occupy a difficult position within the smoking debate. Their position is difficult because they serve competing interests within their community. Bar owners have a primary interest in succeeding with their business. This involves having a pecuniary interest in serving their patrons who have varied wants. At the same time, bar owners have an interest in the welfare of their employees and by extension themselves as all parties navigate a potentially smoke-filled work environment. The tobacco industry's well-funded attempts to discredit the scientific community's evidence of the harms of smoking, while also providing data suggesting smoking

bans result in economic loss for business, makes it increasingly easy to understand the challenges bar owners face.

Unsurprisingly, bar owners are concerned about policies that may result in loss of profit. It is also not a surprise that business owners generally care about the health and safety of their patrons and employees and base their decisions regarding smoking policy on the availability of information either supporting or refuting a policies possible outcomes.

In California, following the passage of the provision to assembly Bill 13 in January 1998, effectively banning smoking in indoor bars, a longitudinal study attempted to ascertain shifts in attitudes among bar owners and staff. The results showed that when first implemented, only 17.3% of bar owners and staff in stand-alone bars preferred to work in a smoke-free environment. Four years later, the number almost tripled to 50.9%. Similarly, the number of stand-alone bar owners and staff feeling a smoke-free work environment is important increased from 20.9% in 1998 to 57.1% in 2002. The number of respondents during this time period that felt more concerned about the effects of secondhand smoke on their health increased from 21.6% to 45.5% (Tang 2003, 88). The study demonstrates that in the four years the smoking ban was in place bar owners went through a significant positive attitudinal change regarding the public smoking ban and the effects of secondhand smoke on one's health.

In Massachusetts, a study regarding support for smoke-free restaurants among adults yielded similar results for the years 1992-1999. In a sample size between 1825 and 7278 individuals depending on the year, adults in Massachusetts garnered increasing support for more restrictive smoking policies as time passed. The largest sample of 7278 respondents for the year 1999 showed the highest level of support with 59.8% wanting completely smoke free restaurants (Brooks 2001, 2). Young people from municipalities in Massachusetts with strong smoking

regulations, after seeing fewer adults smoking, concluded that smoking was socially unacceptable. Adults from towns with strong regulations also concluded smoking was unacceptable (Albers 2004, 347). Comparing levels of restriction on smoking in four different countries showed in all the countries that the higher the restrictions on smoking, the more support there was for some sort of smoking restriction (Borland 2006, 38).

As bar owners determine the effectiveness and increase support for smoking ban policy, it is important they objectively analyze all the data. The Scandinavian Journal of Public Health reported in 2011, that subjective opinions of hospitality workers suggested that Norway's indoor smoke-free policy led to a reduction in the number of patrons visiting establishments. Hospitality workers reported a 56.4% reduction in the number of patron visits. Objective sales data showed this assessment was incorrect and that the smoking ban did not affect the hospitality industry negatively (Lund 2011, 776).

In Beirut Lebanon, a proposed smoking ban became law in September of 2012. Three months prior to its implementation a study conducted to assess attitudes regarding the ban found that 55% of bar owners/managers felt their business would lose revenue. The study found that instead of basing their assessment on objective data they allowed their status as a smoker, in many instances, to influence their attitude. Those bar owners/managers who smoked were more likely to predict revenue loss (Alaeddine 2013, 464).

Does owners' status as a smoker have an effect on the likelihood of sporting a smoke-free policy? In North Carolina, prior to the passage of legislation banning smoking in restaurants and bars, a study concluded that being a nonsmoking owner did affect the likelihood of supporting the smoking ban. While a majority of owners did support a total indoor smoking ban, those who

smoked were far less likely to support a ban than those who had never smoked (Linnan 2001, 90).

The studies regarding bar owners and staff support the hypothesis that indoor public smoking bans receive positive initial support and gather continuing support over time. The studies also support the hypothesis that the decision to support or not support a smoking ban is influenced by ones status as a smoker or nonsmoker.

Bar employees have a higher risk of illness from environmental tobacco smoke than most others within the bar community. This is due to the inability to avoid prolonged exposure while they work. The 1972 Surgeon General's report expressed this sentiment, which was echoed again in the 1986 report (U.S. Department of Health and Human Services 2014, 26).

One study evaluating the effects of a smoke-free workplace law in Canada estimated that the annual mortality rate from exposure to secondhand smoke in the workplace was as high as 102 people per 100,000. This was the highest occupational disease fatality rate in Ontario (Repace 2012, 93).

Common sense suggests bar employees would have positive attitudes towards indoor smoking bans provided they were aware of the dangers of exposure to secondhand smoke. One would think bar employees are completely aware of the dangers associated with tobacco smoke exposure. However, this may not be the case. Restaurant owners and managers in North Carolina were not 100% aware that secondhand smoke causes cancer. They were only 79% and 73% aware respectively. These same people were even less aware that secondhand smoke plays a role in heart attacks (Linnan 2001, 91). In a Chinese study regarding bar owners and exposure to second hand smoke, only 51% of respondents knew that smoking caused heart disease (Liu 2011, 1520). Prior to the implementation of an indoor public smoking ban in New Zealand in 2004,

less than a third of individuals surveyed knew that exposure to secondhand smoke increased an individual's likelihood of having a stroke. More than half of those surveyed, however, did report lung irritation after exposure to secondhand smoke resulting in the majority of respondents supporting some sort of smoking restrictions (Jones 2001,93).

Attitudes of bar employees towards public indoor smoking bans are consistent with attitudes of bar owners. Scotland introduced a comprehensive public smoking ban in March of 2006. A study involving seventy-two bars and 371 bar workers to assess changes in attitudes regarding the ban concluded that bar staff displayed positive attitudes before its implementation and that these positive views increased following its implementation. Prior to the ban 69% of bar workers agreed with the proposed legislation. Three months following the bans implementation the number of those in agreement with the proposed legislation rose to 79%. Pre-implementation support was higher among young non-smokers, but all groups, including older smokers, became more accepting following the bans implementation. Interestingly, prior to the ban, 49% of respondents felt the legislation would have an adverse economic impact. Following implementation of the ban, this number dropped to 20% (Hilton 2007, 5). This is encouraging, considering the influence pre-ban attitudes can have on subjective views towards smoking policy.

The country of New Zealand also achieved similar results following the implementation of its smoke-free bar and restaurant policy in December 2004. In the first 12 months following implementation, public support for the policy increased from 56% to 69%. Support among bar managers increased even more from 44% to 60%. Support for bar workers right to a smoke-free workplace also increased from 81% to 91%. Sales data from the same period showed no

significant increase or decline in revenue (Thomson 2006, 1471). These findings also support the proposition that public smoking bans do not affect bar revenues.

Ireland became the first country to implement a comprehensive countrywide indoor smoke-free policy in March of 2004. Several universities within Ireland working in cooperation conducted a study to measure the levels of support towards the legislation among bar employees both pre-and post-implementation. Support for the measure pre-implementation was much higher than expected with 59.5% of the sample of workers voicing their approval. One year following implementation of the law, support grew even more with support levels reaching a surprising 76.8%. Smokers attitudes towards this legislation also showed a relatively high level of support prior to implementation with a level of 39.4%. One year later, bar worker support increased to 66.7%. This was a gain of over 27 percentage points. Non-smoking bar workers level of support also increased. Even with pre-implementation levels as high as 68.8%, there was still a 12.4% increase in support post-implementation with levels of support reaching 81.2%. Another interesting statistic from this study was the agreement among bar workers that a smoke-free environment makes bars more comfortable and is necessary in order to protect the health of workers. Pre-implementation, 75% of workers agreed to this idea and one year following the laws introduction that level of support increased to over 90% (Pursell 2007, 1).

The results of these studies regarding bar workers supports the hypothesis that public indoor smoking bans can affect the attitudes of bar workers. It supports the conclusion that as individuals interact with the law and are able to form their own opinions regarding it, they will see its positive attributes and begin to support it more.

H1: Bar owners/employees attitudes towards public smoking bans will improve after the law is implemented.

H2: Concern about the loss of revenue among bar owners/employees will diminish after the implementation of the indoor public smoking ban.

H3: Non-smoking bar owners/employees prior to the ban will be more supportive of an indoor smoking ban than those who smoke.

H4: Following the implementation of the smoking ban, smoking bar owners/employees will become more supportive of the ban.

Attitudes of Bar Patrons

Bar patrons are the largest and perhaps most complex group in our discussion. Bar patrons typically do not have a pecuniary interest in the success of a bar. Patrons are also not forced to endure prolonged exposure to environmental tobacco smoke because of work commitments. Patrons are free to come and go as they choose and their reasons to endorse or rally against a smoking policy vary.

California has the most experience with indoor public smoking bans and the state's longitudinal data serves as a gauge to monitor smoking policy progress. In 2003, a study was conducted in California to assess changes in norms as to where smoking should be allowed. The study included six different types of venues including bars, restaurants, hospitals, work areas, indoor sports venues, and indoor shopping malls. In 1992-93, 26.9% of people felt that there should be no smoking in bars at all. In 1995-96, this number increased to 32.7%. In 1998-99, the number of people feeling there should be no smoking in bars rose to 43.2%. This represents a 60.6% increase in people supporting no smoking bars between 1992 and 1999 (Gilpin 2004, 39).

By comparison, the remainder of the United States had lower percentage results. In 1992-93, 23.4% of the remainder of the United States supported completely smoke-free bars. This number increased to 25% in 1995-1996 and increased to 26.8% in 1998-1999. The total increase between 1992 and 1999 was only 14.5% (Gilpin 2004, 40-41). Why was there such a difference between California and the rest of the United States? The difference may be attributed to the length of

time that California already had smoking policies in place. The data supports the contention that as smoking ban policies become more widespread, the more support they will gain.

This same study also investigated different demographic characteristics and made some important discoveries. Males tend to be less supportive of smoking bans. In 1992-93, 62.2% of women in California supported having four of the six venues studied as smoke-free where only 54.7% of men did. By comparison, the rest of the United States had similar findings but the percentages were lower with 43.3% of men supporting four of the six venues as smoke-free and 49.3% of women supporting the measure. These percentages continued to increase over time with 72% of men and 79.4% of women supporting four of the six venues being smoke-free in 1998-99 (Gilpin 2004, 39).

Race was another important factor considered. Interestingly, Hispanics in California consistently support smoke-free venues more than all other races. In 1992-93, 65.5% of Hispanic Californians supported smoke-free environments in four of the six venues studied. Support among Hispanics outside California was 58.9%. In 1998-99, 80.5% of Hispanic Californians supported the measure with those outside California remaining lower at 68.1%.

In 1992-93 among African-Americans in California, 53.2% supported smoke-free venues versus 47.3% throughout the rest of the United States. Among non-Hispanic whites in California during the same time, the percentage was 55% compared to 45% throughout the rest of the United States. These numbers increased to 74.1% and 55.8% in 1998-99. (Gilpin 2004, 39).

Education levels along with age are other important factors to consider. Differences in age did result in slight disparities in levels of support. In 1992-93, 56% of Californians between the ages of 18 and 30 supported smoke-free venues. Sixty percent of those between the ages of 31 and 44 supported the measure with the level of support dropping to 59.1% for those over the age of

forty-five. In 1998, the numbers increased to 79.4%, 76.4%, and 73% respectively. Those living outside of California showed increased levels of support with the passage of time but the numbers were still lower than those living in California (Gilpin 2004, 39).

The relationship between support for smoke-free venues and education usually shows that as education levels increase so does the amount of support. In California in 1992-93, those with a high school education or less supported the measure by 57.5%. Support among those with some college dropped a small amount to 56.6% with college graduates supporting smoke-free venues reaching 63.2%. In 1998-99, the numbers changed to 52.7%, 58.1%, and 65.9% respectively (Gilpin 2004, 39). This demographic data again suggest that tobacco policies do shape attitudes and supports the hypothesis that levels of support for smoking bans increase as education levels increase.

Another question is if the demographic data denoting support for smoke-free policies holds true across studies. In 2003, researchers from the University of Texas conducted a study to evaluate Texas college students' opinions on no-smoking policies, secondhand smoke, and smoking in public places. The study was conducted because college students are primary target market for the tobacco industry and very little is done to help reduce the number of college students that become smokers. The authors conducted surveys on 1188 students attending five different universities in Texas. As with the California study, women were more supportive of smoke-free policies than men were, however, blacks in the study, while less supportive of smoke-free policies than whites, were more supportive than Hispanics (Loukas 2006, 29). This differs from the California study that found Hispanics more supportive. One explanation for this difference is that blacks were admittedly overrepresented in the sample. The study also showed that non-smokers were more likely to support smoke-free policies than smokers. Overall, the

study showed that minorities, women, and non-smokers were more supportive of smoke-free policies than whites, males, and current smokers (Loukas 2006, 29).

In 2003-2004, a study designed to measure adults' opinions before and after implementation of a comprehensive smoke policy was conducted in Lexington-Fayette County Kentucky. The sample consisted of 2146 people and took place over the course of one year. At the end of that year support for the comprehensive smoke policy increased from 56% to 63%. Current smokers in the study did not show a statistically significant increase in support for the policy (Rayens 2007, 262). This may comport with the California study indicating that non-smokers tend to be more supportive of smoke-free policies.

One surprising factor in the Kentucky study is the location. Kentucky is a tobacco state meaning the sale of tobacco produces significant revenue. One might not expect such a high rate of support for smoke-free laws in such a place.

Ireland experienced similar results implementing a comprehensive countrywide indoor smoke-free policy in March of 2004. A sample consisting of 1679 adult smokers from Ireland and the United Kingdom was surveyed to assess the support for the new law. Participants from the United Kingdom were used to form a nationally representative sample of adult smokers from the country. The smoke-free law took place only in Ireland. The surveys were conducted prior to the law and eight to nine months after implementation of the law. This study clearly showed increased support for the law following its implementation. The percentage of Irish smokers supporting a complete ban on smoking in bars rose from 13% to 46%. (Fong 2006, 55). These results support the hypothesis that the longer smoking policies are in effect the more support they will garner.

Another interesting short-term study that supports this hypothesis took place in Germany following the implementation of state-level smoking bans in 2007-2008. The results of the study were interesting in that the introduction of smoke-free policies did not change the population's average smoking behavior in the short term. The study did however, show that those who went out to bars frequently, adjusted their smoking behavior, and ultimately smoked less (Anger 2011, 593). This clearly shows that extended exposure to smoke-free policies does affect a person's attitudes and behavior.

H1: Bar patron's attitudes towards public smoking bans will improve after the law is implemented.

H2: Following the implementation of the smoking ban, female patrons will support indoor public smoking bans more than males.

H3: Following the implementation of the smoking ban, Hispanic patrons will support indoor public smoking bans more than other races.

H4: Following the implementation of the smoking ban, patrons with higher levels of educational attainment will be more supportive of smoke free policies than those with lower levels of education.

Chapter Summary

Public indoor smoking bans are increasingly becoming the norm for many state and local governments. The literature suggests both patrons and employees are receptive to the idea of smoke-free bars. As more smoking laws are implemented, individuals are perhaps more able to see the benefits of the policies themselves. Able to form opinions based on their own experiences, individuals can distance themselves from the disinformation campaign started by the tobacco industry so long ago.

Even with smoking bans gaining traction, individuals still have concerns. They are concerned about the effect smoking bans will have on business and wonder if attitudes towards the bans will shift in a negative direction following their implementation. The cited literature in this paper

addresses these concerns and provides examples regarding the attitudes of individuals both prior to and after implementation of a public smoking ban. For the purpose of this study, these concerns have been shaped into formal hypotheses represented in a conceptual framework. These hypotheses will be tested by examining the attitudes of local bar owners/employees, and patrons within the city of San Marcos.

Conceptual Framework

Table 2.1 shows the conceptual framework for this study. A conceptual framework provides a connection between the formal hypotheses and the supporting literature. The literature discussed the development and importance of public indoor smoking bans, as well as the concerns associated with their implementation. Therefore, the purpose of this explanatory research is to assess the changes in attitudes of bar owners/employees, and patrons following the June 1, 2014 implementation of a complete indoor public smoking ban in San Marcos, Texas.

Table 2.1: Conceptual Framework Linked to the Literature

Hypotheses	Supporting Literature
<p style="text-align: center;">Bar Owners/Employees</p> <p>H1: Bar owners/employees attitudes towards public smoking bans will improve after the law is implemented.</p> <p>H2: Concern about the loss of revenue among bar owners/employees will diminish after the implementation of the indoor public smoking ban.</p> <p>H3: Non-smoking bar owners/employees prior to the ban will be more supportive of an indoor smoking ban than those who smoke.</p> <p>H4: Following the implementation of the smoking ban, smoking bar owners/employees will become more supportive of the ban.</p>	<ul style="list-style-type: none"> • Alaaeddine, 2013 • Albers, 2004 • Borland, 2006 • Brooks, 2001 • Gilpin, 2003 • Lund, 2011 • Linnan 2001 • Repace, 2012 • Jones, 2001 • Hilton, 2007 • Thomson, 2006 • Pursell, 2007
<p style="text-align: center;">Bar Patrons</p> <p>H5: Bar patron's attitudes towards public smoking bans will improve after the law is implemented.</p> <p>H6: Following the implementation of the smoking ban, female patrons will support indoor public smoking bans more than males.</p> <p>H7: Following the implementation of the smoking ban, Hispanic patrons will support the indoor public smoking ban more than other races.</p> <p>H8: Following the implementation of the smoking ban, patrons with higher levels of educational attainment will be more supportive of smoke free policies than those with lower levels of education.</p>	<ul style="list-style-type: none"> • Gilpin, 2003 • Loukas, 2006 • Rayens ,2007 • Fong, 2006 • Anger, 2011

Chapter 3

Methodology

Chapter Purpose

The purpose of this chapter is to present the methodology used to assess changes in attitudes regarding the 2014 indoor public smoking ban in San Marcos, Texas. Survey Research was the method used in this study. Surveys were distributed by hand to bar patrons, employees, and owners, asking their opinions on issues related to the hypotheses of this study.

The operationalization of the variables involved in testing the hypotheses of this study are presented in table 3.1. This chapter will also discuss how the surveys in this study were distributed to individuals and what statistics were used to determine the results.

Table 3.1: Operationalization Table

Formal Hypotheses	Survey Questions	Measured
Bar Owners/Employees		
H1: Bar owners/employees attitudes towards public smoking bans will improve after the law is implemented.	At what level did you support the public indoor smoking ban prior to its implementation? At what level do you support the public indoor smoking ban now ?	1=Unsupportive 2=Somewhat Unsupportive 3=Indifferent 4=Somewhat Supportive 5=Supportive
H2: Prior to implementation of a smoking ban bar owners/employees will fear a loss of revenue. H3: Following implementation of the ban bar owners will agree that a public indoor smoking ban does not negatively affect bar revenues.	Prior to its implementation, did you feel the public indoor smoking ban would cause a loss in business/revenue? Do you currently feel the public indoor smoking ban is causing a loss in business/revenue?	1=Yes 0=No 1=Yes 0=No

Formal Hypotheses	Survey Questions	Measured
Bar Owners/Employees		
H4: Non-smoking bar owners/employees prior to the ban will be more supportive of an indoor smoking ban than those who smoke.	Are you an active smoker? An active smoker is an individual that has smoked in the last thirty days.	1=Yes 0=No
H5: Following the implementation of the smoking ban, smoking bar owners/employees will become more supportive of the ban.	Were you an active smoker just prior to the implementation of the public indoor smoking ban on June 1, 2014?	1=Yes 0=No
	At what level did you support the public indoor smoking ban prior to its implementation?	1=Unsupportive 2=Somewhat Unsupportive 3=Indifferent 4=Somewhat Supportive 5=Supportive
	At what level do you support the public indoor smoking ban now ?	1=Unsupportive 2=Somewhat Unsupportive 3=Indifferent 4=Somewhat Supportive 5=Supportive

Table 3.1: Operationalization Table cont.

Formal Hypothesis	Survey Questions	Measured
Bar Patrons		
H5: Bar patrons attitudes towards public smoking bans will improve after the law is implemented	At what level did you support the public indoor smoking ban prior to its implementation?	1=Unsupportive 2=Somewhat Unsupportive 3=Indifferent 4=Somewhat Supportive 5=Supportive
	At what level do you support the public indoor smoking ban now ?	

Formal Hypothesis	Survey Questions	Measured
Bar Patrons		
H6: Following the implementation of the smoking ban, female patrons will support indoor public smoking bans more than males.	Are you a male or female?	1=Male 0=Female
H7. Following the implementation of the smoking ban, Hispanic patrons will support indoor public smoking bans more than other races.	What race do you consider yourself? At what level do you support the public indoor smoking ban now ?	1=Black 2=White 3=Hispanic 4=Other 1=Unsupportive 2=Somewhat Unsupportive 3=Indifferent 4=Somewhat Supportive 5=Supportive
H8: Following the implementation of the smoking ban, patrons with higher levels of educational attainment will be more supportive of smoke free policies than those with lower levels of education.	How many years of formal education do you have? _____ What is the highest degree or level of school you have completed? _____	Ratio Level of Measurement Ordinal Level of Measurement

For More information on Operationalization Tables see Shields & Tajalli (2006) and Shields & Rangarajan (2013)

Survey Distribution, Population, and Sampling

The distribution of surveys for this study focused on bar owners, employees, and patrons of bars within the city limits of San Marcos, Texas. The surveys were distributed and collected by visiting different establishments throughout San Marcos and manually disseminating the surveys to bar owners/employees and patrons. Surveys were collected over a period of two months and two hundred and forty three surveys were collected. Among the surveys collected, 192 were patrons, 45 were employees, and six were owners. Due to the small number of owners surveys collected, the data for owners and employees was combined for the purpose of the study. Table 3.2 breaks down the numbers of important demographic characteristics of both employees/owners and patrons. A copy of the surveys for patrons and owners/employees can be found in Appendix A.

Table 3.2: Demographics

Demographics		Owners/ Employees N	Patrons N
Race/Ethnicity	White	41	126
	Hispanic	7	38
	Black	2	6
	Other	1	18
Gender	Male	39	107
	Female	12	84
Highest Level of Education	Less than HS	1	3
	High School	6	37
	Assoc. Degree	7	30
	College Degree	36	92
	Graduate Degree	1	26

Statistics

The primary method of statistical analysis used in this study is a regression analysis. Two nonparametrical tests were also used in this study. The first is a Wilcoxon signed-rank test which

is a nonparametrical test that computes the differences of scores between two related variables and compares the sum of positively ranked with that of negatively ranked. The second nonparametric test used in this study is the McNemar test. The McNemar test is used to test possible differences between two related dichotomous variables.

One other test used in this study is the paired t-test. The paired t-test is used to assess the difference between two related variables. In a paired t-test, a single sample of individuals are measured twice on the same dependent variable. The next chapter focuses on the interpretation of the results from these statistical tests.

Chapter 4

Results

Chapter Purpose

This chapter presents the results of the regression analysis, Wilcoxon Signed Ranks Test, paired t-test and the McNemar test used to evaluate the hypotheses regarding the assessment of changes in attitudes of bar owners/employees and patrons before and after the implementation of the 2014 indoor public smoking ban in San Marcos.

Bar Owners/Employees

H1: Bar owners/employees attitudes towards public smoking bans will improve after the law is implemented.

Table 4.1 is a Wilcoxon Signed Ranks Test that addresses the first hypothesis of this study. The Wilcoxon test shows that increase in support after the implementation of the ban is significantly higher than decline in support ($Z = -2.998$, $P < .01$). Among the 50 employees responding, 19 showed an increased level of support for the ban with only four showing a decreased level of support. Twenty-seven respondents reported no change in their level of support. The results of this test clearly support the hypothesis that the smoking ban improved the level of support among employees/owners after it was implemented.

Table 4.1 Wilcoxon Signed Ranks Test for Hypothesis H1

		Ranks		
		N	Mean Rank	Sum of Ranks
Level of current support -	Negative Ranks	4 ^a	10.75	43.00
Level of support prior to the ban	Positive Ranks	19 ^b	12.26	233.00
	Ties	27 ^c		
	Total	50		

a. Level of current support < Level of support prior to the ban

b. Level of current support > Level of support prior to the ban

c. Level of current support = Level of support prior to the ban

H2: Concern about the loss of revenue among bar owners/employees will diminish after the implementation of the indoor public smoking ban.

The second hypothesis in this study is tested by the use of a McNemar test (Table 4.4). The test is used to ascertain changes in attitudes among bar owners/employees regarding the loss of revenue prior to and following the implementation of the smoking ban. Of the 51 respondents, an overwhelming majority (34 respondents), reported that they did not fear a loss of revenue either before or after the implementation of the ban. Regarding the effect on revenue following the implementation of the band, the results support the hypothesis that concern about revenue among the bar owners/employees will diminish after the implementation of the ban (McNemar Test, $P < .05$). Of the 34 respondents that felt they would not lose revenue prior to the ban, all of them continued with this thought after the ban's implementation. Of the 17 bar owners/employees that felt they would lose revenue prior to the ban's implementation, seven changed their opinion and came to realize that the ban had no negative impact on their revenue. Our findings therefore, support the hypothesis that a public indoor smoking ban does not negatively affect bar revenues.

Table 4.2 McNemar Test for Hypothesis H2

Current loss of revenue? & Loss of revenue prior?		
Current loss of revenue?	Loss of revenue prior?	
	No	Yes
No	34	7
Yes	0	10

H3: Non-smoking bar owners/employees prior to the ban will be more supportive of an indoor smoking ban than those who smoke.

The regression analysis in Table 4.3 addresses this hypothesis. The dependent variables in Table 4.3 are the level of support prior and after the implementation of the ban. The findings show that prior to the implementation of ban, there was no difference in the level of support for

the ban between the two groups of smoking and non-smoking owners/employees. Therefore, this hypothesis is not supported by the findings of this study.

Table 4.3: Level of Support Before and After the Smoking ban Among Employees.

	Before	After
Smoker	-.716	-1.028**
Age	.039	.015
Hispanic	-.335	-.470
Education (yrs)	.090	-.006
Male	-.450	-.338
Constant	1.925	4.699**
R-square	.189	.270
F-value	2.057	3.324*

* Significant at $\alpha < .05$

** Significant at $\alpha < .01$

H4: Following the implementation of the smoking ban, smoking bar owners/employees will become more supportive of the ban.

The hypothesis asks if smoking bar owners/employees will become more supportive of the ban following its implementation. The paired samples test in table 4.4 addresses this question. The test compares the level of support among smoking owners/employees before and after implementation of the indoor smoking ban. The results show that following the implementation of the indoor smoking ban the level of support among smoking owners/employees did improve. As a result we can conclude this hypothesis is supported.

Table 4.4: Paired Samples for Hypothesis H4

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Level of support prior to the ban	3.053	19	1.2681	.2909
Level of current support	3.632	19	1.1161	.2560

Table 4.4: Paired Samples for Hypothesis H4 (cont.)

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Level of support prior to the ban - Level of current support	-.5789	1.1698	.2684	-1.1428	-.0151	-2.157	18	.045

Bar Patrons

H5: Bar patron's attitudes towards public smoking bans will improve after the law is implemented.

Table 4.5 presents the results of a Wilcoxon Signed Ranks Test that addresses the fifth hypothesis of this study. The results show that after the smoking ban went into effect, the overall level of support for the ban among bar patrons increased ($Z = -4.032, P < .001$). Among the 190 patrons responding, 38 showed an increased level of support for the ban with 13 reporting a decreased level of support. One hundred and thirty-nine bar patrons reported no change in their level of support. In other words, more patrons came to support the ban than changing their opinions in a negative direction. The significant results of the Wilcoxon test gives support to the proposition of this hypothesis.

Table 4.5 Wilcoxon Signed Ranks Test for Hypothesis H5

		Ranks		
		N	Mean Rank	Sum of Ranks
Level of current support - Level of support prior to the ban	Negative Ranks	13 ^a	19.15	249.00
	Positive Ranks	38 ^b	28.34	1077.00
	Ties	139 ^c		
	Total	190		

- a. Level of current support < Level of support prior to the ban
- b. Level of current support > Level of support prior to the ban
- c. Level of current support = Level of support prior to the ban

H6: Following the implementation of the smoking ban, female patrons will support indoor public smoking bans more than males.

H7: Following the implementation of the smoking ban, Hispanic patrons will support the indoor public smoking ban more than other races.

H8: Following the implementation of the smoking ban, patrons with higher levels of educational attainment will be more supportive of smoke free policies than those with lower levels of education.

The regression results in Table 4.6 addresses all three hypotheses H6, H7, and H8. The regression results show that following the implementation of the ban there is no significant difference in level of support between the two genders. Nor do the results indicate a different level of support between Hispanics and other races. Interestingly, the years of education among patrons did reach a level of significance but only following the bans implementation with those having more education being more supportive of the ban than those with less education. Smoking status also reached a level of significance with smokers being far less supportive of the smoking ban both before and following its implementation.

The next chapter focuses on conclusions reached from this research in addition to limitations of the study and possibilities for future research.

Table 4.6: Level of Support Before and After the Smoking ban Among Patrons.

	Before	After
Smoker	-1.386**	-1.191**
Age	.001	.001
Hispanic	-.118	.436
Education (yrs)	.088	.178**
Male	-.232	-.346
Constant	2.744**	1.517
R-square	.225	.246
F-value	10.150**	11.405**

* Significant at $\alpha < .05$

** Significant at $\alpha < .01$

Chapter 5

Conclusion

Chapter Purpose

This final chapter provides a summary of the findings from the data collected from bar owners/employees and patrons regarding changes in attitudes regarding the indoor public smoking ban in San Marcos, Texas.

Summary of Research

The purpose of this research is to assess changes in attitudes among bar owners/employees and patrons regarding the 2014 public indoor smoking ban in San Marcos, Texas. This study has developed eight hypotheses.

H1: Bar owners/employees attitudes towards public smoking bans will improve after the law is implemented.

H2: Concern about the loss of revenue among bar owners/employees will diminish after the implementation of the indoor public smoking ban.

H3: Non-smoking bar owners/employees prior to the ban will be more supportive of an indoor smoking ban than those who smoke.

H4: Following the implementation of the smoking ban, smoking bar owners/employees will become more supportive of the ban.

H5: Bar patron's attitudes towards public smoking bans will improve after the law is implemented.

H6: Following the implementation of the smoking ban, female patrons will support indoor public smoking bans more than males.

H7: Following the implementation of the smoking ban, Hispanic patrons will support the indoor public smoking ban more than other races.

H8: Following the implementation of the smoking ban, patrons with higher levels of educational attainment will be more supportive of smoke free policies than those with lower levels of education.

Conclusions Reached

Three major conclusions were reached in this study and are related to the hypotheses presented. The first has to do with employees/owners and policy implementation.

If one looks at smoker status among patrons, they will see that there is a significant difference in the level of support between smokers and nonsmokers, with nonsmokers being far more supportive of the ban both prior to and after its implementation. Among employees/owners however, the results are different. Among employees/owners, there is only a significant difference in the level of support between smokers and nonsmokers following the implementation of the ban. This suggests that prior to the ban, without the existence of a smoking policy; employees/owners tend to simply accept the status quo. They accept the fact that there is no smoking policy and are indifferent to the proposal of a smoking policy.

The second conclusion reached regards the topic of addiction. If one again considers smoker status and the differences in level of support among patrons after the implementation of the ban they will see that smokers are still, one year after the bans implementation, still far less supportive than nonsmokers. This suggests that perhaps smoking addiction plays a role in the continued level of nonsupport among smokers.

The third conclusion regards educational attainment. Among patrons, those with higher levels of education became more supportive of the ban following its implementation than those with lower levels. This did not occur among employees/owners, likely due to the lack of educational diversity among them. These findings suggest that perhaps those with lower levels of educational attainment are unable to understand smoking policies and their potential benefits. This suggests that perhaps educating people regarding the benefits of smoking policy will increase levels of support.

Possibilities for Future Research

As public smoking bans become more common, it is important to ascertain their efficacy. Studies like this one are useful because they allow policy makers to determine if smoking policies are effectively meeting the needs of communities. In this study, we see that in communities considering smoke free policies it might be beneficial to reach out to employees to inform them of the potential benefits of smoke free workplaces and how other employees in other communities have benefited from similar policies. We also see that educational attainment plays a role in the level of support for smoke free policies and that campaigns to educate the public on the benefits of these policies both prior to and following their implementation may be useful.

In the future, it would be beneficial to conduct another study similar to this one, investigating changes in attitudes regarding the indoor public smoking ban in San Marcos. It would be interesting to see how attitudes regarding the ban change as the ban gains longevity.

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Appendix A

Survey Questions

1. Are you an active smoker? An active smoker is an individual that has smoked in the last thirty days. **Yes** **No**

2. Were you an active smoker **just prior** to the implementation of the public indoor smoking ban on June 1, 2014? **Yes** **No**

3. At what level did you support the public indoor smoking ban **prior** to its implementation?

Unsupportive / Somewhat Unsupportive / Indifferent / Somewhat Supportive / Supportive

4. At what level do you support the public indoor smoking ban **now**?

Unsupportive / Somewhat Unsupportive / Indifferent / Somewhat Supportive / Supportive

5. **Prior** to its implementation, did you feel the public indoor smoking ban would cause a loss in business? **Yes** **No**

6. Do you **currently** feel the public indoor smoking ban is causing a loss in business?

Yes **No**

7. What is your age? _____

8. What race do you consider yourself? (**Pick One**)

Black **White** **Hispanic** **Other**

9. How many years of formal education do you have? _____ (**1-12 years = 1st. Grade thru High School**)
(**12-16 years = College**)
(**16+ years =Post Grad**)

10. What is the highest degree or level of school you have completed? _____

11. Are you a male or female?

Male **Female**

12. Are you a resident of San Marcos? **Yes** **No**

13. How many years have you been a resident of San Marcos? _____

14. Do you have any additional comments regarding the public indoor smoking ban?

Appendix A (cont.)

Survey Questions

1. Are you an active smoker? An active smoker is an individual that has smoked in the last thirty days. **Yes** **No**

2. Were you an active smoker **just prior** to the implementation of the public indoor smoking ban on June 1, 2014? **Yes** **No**

3. At what level did you support the public indoor smoking ban **prior** to its implementation?
Unsupportive / Somewhat Unsupportive / Indifferent / Somewhat Supportive / Supportive

4. At what level do you support the public indoor smoking ban **now**?
Unsupportive / Somewhat Unsupportive / Indifferent / Somewhat Supportive / Supportive

5. **Prior** to its implementation, did you feel the public indoor smoking ban would cause you a loss in revenue? **Yes** **No**

6. Do you **currently** feel the public indoor smoking ban is causing you a loss in revenue?
Yes **No**

7. What is your age? _____

8. What race do you consider yourself? (**Pick One**)
Black **White** **Hispanic** **Other**

9. How many years of formal education do you have? _____ (**1-12 years = 1st. Grade thru High School**)
(12-16 years = College)
(16+ years =Post Grad)

10. What is the highest degree or level of school you have completed? _____

11. Are you a male or female?
Male **Female**

12. Are you a resident of San Marcos? **Yes** **No**

13. How many years have you been a resident of San Marcos? _____

14. Do you have any additional comments regarding the public indoor smoking ban?

Appendix A (cont.)

Survey Questions

1. Are you an active smoker? An active smoker is an individual that has smoked in the last thirty days. **Yes** **No**

2. Were you an active smoker **just prior** to the implementation of the public indoor smoking ban on June 1, 2014? **Yes** **No**

3. At what level did you support the public indoor smoking ban **prior** to its implementation?

Unsupportive / Somewhat Unsupportive / Indifferent / Somewhat Supportive / Supportive

4. At what level do you support the public indoor smoking ban **now**?

Unsupportive / Somewhat Unsupportive / Indifferent / Somewhat Supportive / Supportive

5. On average, how many times do you frequent a bar in a given month? _____

6. Which statement best applies to you?

a. I frequent bars **more often** as a result of the public indoor smoking ban.

b. I frequent bars **less often** as a result of the public indoor smoking ban.

c. The public indoor smoking ban has **not** changed how often I frequent bars.

7. What is your age? _____

8. What race do you consider yourself? (**Pick One**)

Black **White** **Hispanic** **Other**

9. How many years of formal education do you have? _____ (**1-12 years = 1st. Grade thru High School**)
(**12-16 years = College**)
(**16+ years =Post Grad**)

10. What is the highest degree or level of school you have completed? _____

11. Are you a male or female?

Male **Female**

12. Are you a resident of San Marcos? **Yes** **No**

13. How many years have you been a resident of San Marcos? _____

14. Do you have any additional comments regarding the public indoor smoking ban?