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PREDICTORS OF COMMUNITY SUPPORT FOR SMOKE-FREE PUBLIC POLICIES

By

Marisa Lynn Sturza

A THESIS

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ABSTRACT

PREDICTORS OF COMMUNITY SUPPORT FOR SMOKE-FREE PUBLIC POLICIES

By

Marisa Lynn Sturza

Smoking is responsible for a significant number of health-related illnesses and deaths, impacting smokers and nonsmokers. While states have made various efforts to reduce secondhand smoke exposure, California is the only state to have a complete smoking ban in all indoor workplaces, including bars and restaurants. Since tobacco companies resist attempts to implement smoking bans, community support is essential to passing anti-smoking legislation. It may be useful for policymakers to understand not only levels of community support, but also what predicts/does not predict support for smoke-free policies. The present study interviewed 230 residents of a Midwestern county through a random-digit telephone survey. In general, participants held supportive attitudes and intentions about public smoking bans. The personal smoking behavior and degree that these individuals felt bothered by the presence of smoke significantly predicted their attitudes about these policies. The smoking behavior of the individual's family and his/her political values also significantly predicted supportive attitudes and intentions about public smoking bans.

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CHAPTER 1

Introduction

In the United States, during the period of 1995-1999, 444,000 persons died

prematurely due to cigarette smoking. Cigarette smoking has been reported as the

primary cause of preventable death in the United States (Centers for Disease Control,

2002a). Tobacco use has been deemed responsible for more deaths per year than the

combined death toll from alcohol use, drug use, violence, car crashes, accidental injuries,

and HIV/AIDS (Moore, Wolfe, Lindes, & Douglas, 1994). While active efforts have

been made to reduce the number of smokers in the United States (Bruce & Teijlingen,

1999; Siegel & Biener, 1997; Soldz, Kreiner, Clark, Krakow, 2000; Taylor et al., 1998),

there are still approximately 46 million smokers in the United States addicted to tobacco

products (American College of Preventive Medicine, 1997). This includes approximately

28.5% of United States high school students (Centers for Disease Control, 2002b) and

23.4% of United States adults (Centers for Disease Control, 2003b).

While smokers are subject to serious health risks because of their smoking

behaviors, the dangers of smoking are extended to nonsmokers exposed to secondhand

smoke as well. Secondhand smoke, as it is commonly referred to, is called

Environmental Tobacco Smoke (ETS) in the literature (Browner, 1993). Environmental

Tobacco Smoke has been defined by the Environmental Protection Agency (EPA) as a

combination of burning cigarettes, cigars, pipes, and smoke exhaled by smokers. Each

year in the United States, approximately 38,000 individuals die because of ETS exposure

(Centers for Disease Control, 2003a). Of the yearly secondhand smoke-related deaths,

3,000 are due to lung cancer alone in nonsmokers (Browner, 1993). The exposure to ETS

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is most dangerous to nonsmokers when they are indoors. Based on scientific evidence supporting this danger, the EPA has stated that smoking bans are warranted in day-cares, schools, workplaces, restaurants, and bars (Browner, 1993). The Task Force on Community Preventive Services (TFCPS) has also recommended restricting or banning smoking in public places and workplaces (Wasserman, 2001), as has the Centers for Disease Control (Centers for Disease Control, 2003a).

Restaurants and bars have been particularly important when considering smoking bans due to the fact that they have created the largest health risk in terms of exposure to secondhand smoke (Robinson & Speer, 1995). Individuals who work in restaurants have exposure to ETS at a rate that is 1.6 to 2.0 times greater than office workers. Bar employees have a 3.9 to 6.1 times greater exposure rate to ETS than office workers (Siegel, 1993). The negative effect of secondhand smoke on nonsmokers and bar employees can be reduced by prohibiting smoking in places they frequent, including restaurants and bars (Browner, 1993).

Smoking Bans

In the United States, there have been federal laws aimed at reducing the incidence of smoking in public facilities. Congress, in 1989, passed legislation banning smoking on domestic airline flights less than 2 hours in duration. This legislation was later extended to airline flights less than six hours in duration (Jacobson, Wasserman, & Anderson, 1997). In addition, Congress also passed the Pro Children Act of 1994, which banned smoking in indoor buildings used regularly for delivering services to children. Such buildings included schools, libraries, day-care facilities, child-development facilities, and health-care facilities (Jacobson et al., 1997).

At the state level, 49 states in the United States have developed some smoking restrictions. However, the state of California is the only state, to date, to maintain a complete statewide smoking ban in all workplaces, including restaurants and bars (Magzamen & Glantz, 2001). There is an inconsistency between the known health problems related to secondhand smoke (Browner, 1993; Robinson & Speer, 1995; Siegel, 1993), and the lack of policies in place which aim to reduce community exposure to secondhand smoke. It is this disconnect between health risks and current policies which provided the basis for the present study. If it is known that environmental tobacco smoke is a hazardous environmental toxin for humans, what accounts for this disconnect between information and policy? Can community attitudes toward public smoking bans be instrumental in reducing this gap?

The present study investigated whether community residents in the present study supported/did not support public smoking bans. Beyond obtaining a public opinion poll of community attitudes, the present study used existing political attitude models to evaluate whether existing predictors of political attitudes would be applicable to measuring community support/lack of support for public smoking bans. In addition, the present study was interested in understanding whether the same predictors previously found to predict attitudes around controversial issues would also predict an individual's intentions to act in support of or in opposition to smoke-free policies. If attitudes were found to predict intended behaviors, then the information provided by this study may be particularly interesting to policymakers. Overall, the purpose of obtaining such information from community residents was to see how their attitudes and intentions played into the gap between information and policy on environmental tobacco smoke. In

other words, the present study sought to investigate whether a model of participant attitudes and intentions related to public smoking bans may be able to inform policy in order to create more unification between health information and policy implementation.

Previous smoke-free policy attempts

As the state with a complete smoking ban, California's unique state-level policy originally began on the local level. In 1990, the city council in the small community of Lodi, California, passed a citywide smoking ban in public places, including restaurants (Adams, 1998). Following the smoking ban in Lodi, 108 cities in California instituted smoking bans in restaurants by 1994. Also during this time period, 89 cities in California implemented smoking bans in workplaces (Adams, 1998). Eventually, these workplace-smoking bans reached the state level. In 1995, California implemented the California Smoke-Free Workplace Law [Assembly Bill (AB) 13]. However, exceptions to this law included bars, taverns, and gaming rooms (Magzamen & Glantz, 2001). While these three exceptions were included in the original act in 1994, the California indoor workplace-smoking ban was extended to include these three places on January 1, 1998 (Magzamen & Glantz, 2001).

An argument made against the smoking ban implemented in the state of California was that the ban would reduce the amount of business for restaurant and bar owners. However, studies conducted by the Board of Equalization failed to find a reduction of sales (Glantz & Smith, 1997). In fact, they actually found a 6.0% increase in sales for restaurants and bars in the first quarter of 1998 (after implementing the ban) compared to the first quarter of 1997. Further reviews of the impact of smoking bans on restaurant and bar sales have not found negative economic effects caused by the

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implementation of smoking bans (Bartosch & Pope, 2002; Glantz & Smith, 1997;). In a

detailed trend analysis comparing cities with smoking bans and cities without these types

of bans, no significant differences were found in terms of sales tax revenue (Glantz &

Smith, 1997). A pre-post test of restaurants before and after the implementation of

smoking bans concluded that no differences in sales tax revenue existed after the

smoking ban was implemented (Bartosch & Pope, 2002). While these two studies did

not demonstrate increased revenues due to smoking bans, they did discount the argument

that such bans reduce restaurant/bar overall revenues. Another potential economic

benefit from smoking bans is that employers may find reduced maintenance costs

(cleaning, heating, and cooling) as a result of eliminating the presence of indoor smoke

(Tyler, 1998).

In addition to providing financial benefits for businesses affected by the smoking

bans, health benefits have also been demonstrated. Since the ban has been implemented

in California, there has been a large increase in the number of workers who now work in

a smoke-free environment. In 1990, 35% of workers worked in a smoke-free

environment, compared to 93.4% in 1999 (Gilpin et al., 2002). Upon implementation of

the ban in bars, bartenders exhibited a reduction in respiratory symptoms of secondhand

smoke exposure. These symptoms included wheezing, dyspnea, coughing, phlegm

production, and sensory irritations to the eye and nose (Eisner, Smith, & Blanc, 1998).

Bartenders also demonstrated a significant increase in lung capacity after the ban was put

in place. Upon implementation of the ban, bartenders' previously high levels of exposure

to secondhand smoke were immensely reduced. Clearly, the statewide smoking ban in

California has demonstrated significant health benefits.

Even though California has successfully implemented the statewide smoking ban, there were impediments to the passage of this legislation. Specifically, eight bills were proposed after the passage of the smoke-free legislation in an attempt to overturn the newly formed ban. The tobacco industry fiercely resisted this state legislation. They tried to work inside the state legislature to stall and prevent the smoke-free bills from passing. A method the tobacco industry used to try to work inside the state legislature was to provide campaign contributions to state legislators (Glantz & Begay, 1994). The legislators attempting to pass the eight bills preventing the smoking ban had individually received significant amounts of campaign contributions from the tobacco companies. Tobacco companies contributed a yearly total of $412,800 to legislators who voted "yes" on the preventive bill. In contrast, the tobacco companies only contributed a yearly total of $1,000 to legislators who voted against the preemptive bill and for public smoking bans (Magzamen & Glantz, 2001). Although these efforts were strong, the tobacco companies failed to prevent the California statewide smoking ban from passing.

The resistance of tobacco companies to anti-smoking legislation has also been evident in other areas of the United States. They have provided numerous contributions to Congress members and pro-smoking groups throughout the United States (Gibson, 1997). In fact, the largest donations received by the national political party committees have been from tobacco companies. Between the years of 1995 and 2000, tobacco companies in the United States donated $32 million dollars to political parties and political candidates (MacKay & Eriksen, 2002). Congressional representatives received $5 million dollars alone during this period. Monardi and Glantz (1998) found a significant relationship between resistance to anti-smoking policies by legislators and campaign

contributions to the legislators by tobacco companies in the states of Colorado, New Jersey, Pennsylvania, and Washington.

Aside from campaign contributions to national and state legislators, tobacco companies also have worked to prevent local governments from having the power to pass smoking bans in their communities (Siegel et al., 1997). By pushing legislators to adopt legislation that allows for the passage of anti-smoking legislation only at the state level, tobacco companies have resisted anti-smoking efforts. These activities by tobacco companies have prevented legislative momentum at the local level. (Adams, 1998). This legislation, entitled "the preemptive clause" has been implemented in 29 states in the United States, including the state where data was collected in the current study (Siegel et al., 1997).

Based on the extensive resistance that has been put forth by the tobacco companies on state and national levels in the United States, a high degree of public support for smoke-free public policies would be necessary in order to develop these policies in other states across the United States. While basic information about the level of public support may be useful for advocates and legislators, it is also important for these key leaders to understand what leads to public support, or lack of support, for smoke-free public policies. Policymakers may be particularly interested in whether individuals would vote for a candidate who favored public smoking bans. Information about the predictors of public support for smoke-free policies and levels of support may then be helpful in bridging the gap between the health risks of environmental tobacco smoke and the current low number of comprehensive smoking bans in place.

Predictors of Public Support for Smoking Bans

Examination of the predictors of public support specifically related to smoke-free

policies has been limited within the literature. In cases where these predictors were

evaluated with regard to this issue, they were done so either informally or with limited-

item measures (Brooks & Mucci, 2001; Dixon, Lowery, Levy, & Ferraro, 1991; Green &

Gerken, 1989; Taylor, Ross, Goldsmith, Zanna, & Lock, 1998). Further investigation of

predictors that have been used to predict other controversial political attitudes may lend

valuable information to the smoke-free policies literature, and support a call from the

literature to understand more comprehensively which factors are related to individual

levels of support/lack of support for public smoking bans (Brooks & Mucci, 2001). By

reviewing and adapting the predictors from previously existing attitude models, greater

explanation in community attitudes about public smoking bans may be provided. The

most common variable used to predict political attitudes and intentions has been self-

interest. This variable was reviewed first. Through the expansion in the explanation of

political attitudes, a model using self-interest, combined with social identification and

value relevance, was developed by Boninger et al. (1995). An examination of the three

predictors employed in the Boninger et al. (1995) model, and an evaluation of their

individual and joint utility in predicting attitudes toward public smoking bans, was

conducted.

Self-interest

Self-interest has been defined as "the degree to which a political issue impinges

immediately and tangibly upon an individual's private life" (Young, Borgida, Sullivan, &

Aldrich, 1987). The relationship between self-interest and support for public policies has been extensively debated within the literatures of psychology and political science.

One set of studies has failed to find support for the relationship between self-interest and political attitudes (Barton, 1968; Lau, Brown, Sears, 1978; Shapiro & Mahajan, 1986). When examining attitudes in support of the Vietnam War, researchers were not able to substantiate a relationship between eligibility for the military draft (self-interest) and supportive attitudes for the Vietnam War (Barton, 1968; Lau, Brown, & Sears, 1978). In another of these studies, the researchers failed to find a relationship between women's employment status and their support for affirmative action for women (Shapiro & Mahajan, 1986). Specifically, in the arena of substance use, Sivacek and Crano (1982) did not find a significant relationship between the age of young people and their attitudes about a policy that would raise the legal drinking age.

In contrast, a second group of studies did find support for the relationship between self-interest and attitudes. Crowe and Bailey (1995) found individuals with a high frequency of drinking behavior *did* in fact have less supportive attitudes toward more stringent drunk driving laws. Specifically in the area of self-interest predicting support for tobacco control legislation, there have been several studies supporting the relationship between self-interest (defined as personal smoking behavior) and attitudes of support for tobacco control legislation (Brooks & Mucci, 2001; Dixon et al, 1991; Green & Gerken, 1989; Taylor, Ross, Goldsmith, Zanna, & Lock, 1998). Since this has been a controversial predictor of attitudes, its measurement properties and capabilities for evaluating smoke-free policies were examined.

Measuring Self-Interest

Personal smoking behavior. A dimension of self-interest that has been tested with regard to support for smoke-free policies is personal smoking behavior, which has been found to significantly predict attitudes toward smoke-free policies (Brooks & Mucci, 2001; Dixon et al., 1991; Green & Gerken, 1989; Taylor et al., 1998). Green and Gerken (1989) initially found that personal smoking behavior was related to support for smoke-free polices. They believed that this relationship was based on the fact that the participants were able to understand clearly how their self-interest (smoking behavior) would be impacted by policies that would reduce the locations where they could smoke (Green & Gerken, 1989). Specifically, heavy smokers tended to support *reducing* smoking restrictions (66%), while a majority of nonsmokers supported *increasing* smoking restrictions (60%). Green and Gerken (1989) were able to provide support for the relationship between self-interest and attitudes of policy support; however, the results provided were in terms of percentages of individuals who fell into particular categories. Collecting and analyzing bivariate or multivariate level data may have provided a greater understanding of this construct. In addition, individuals were asked to self-report into categories of personal smoking behavior. It did not appear that clear definitions were provided about how many daily cigarettes smoked indicated that an individual was a light, moderate, or heavy smoker.

The study by Green and Gerken (1989) was replicated and extended by Dixon et al. (1991). They expanded the construct of self-interest to include the amount of income individuals received from tobacco, how much individuals were bothered by being around smoking, friends' smoking behavior, and parents' smoking behavior. Dixon et al. (1991)

found significant correlations between each of the self-interest variables [amount of income individuals receive from tobacco (.14), how much individuals were bothered by smoking (.30), friends' smoking behavior (- .23), and parents' smoking behavior (.07)] and support for smoking restrictions in public. This study expanded the definition of self-interest and also measured it using a bivariate level of analysis. This study gave additional support to the theory that self-interest predicts political attitudes, specifically when applied to anti-smoking policies. Again, it did not appear that clear definitions of the number of cigarettes related to each category of personal smoking behavior were included.

Brooks and Mucci (2001) also demonstrated support for the relationship between personal smoking behavior and support for smoke-free public policies. In their study, approximately 60% of nonsmokers supported smoke-free restaurant policies. Yet, only 34% of current smokers were supportive of the restaurant restriction. Their results provided further evidence of the relationship between personal smoking behavior and attitudes supporting smoke-free policies. Brooks and Mucci (2001) did include measures of the number of cigarettes for levels of personal smoking behavior for daily smokers, but did not provide the number of cigarettes associated with occasional smoking behavior.

Degree bothered by smoke. Beyond simply personal smoking behavior, a second dimension of self-interest that has been measured in the literature is the ways in which an individual feels bothered by exposure to secondhand smoke (Dixon et al., 1991; Green & Gerken, 1989;). A large portion of those individuals who were very sensitive to cigarette smoke (71.3%) reported wanting an increase in smoking restrictions (Green & Gerken, 1989). When smoking behavior and sensitivity to smoke were combined, nonsmokers

who were very sensitive to cigarette smoke (70%) wanted an increase in smoking restrictions (Green & Gerken, 1989). This supports that smoking behavior and sensitivity to smoke were both important dimensions of self-interest.

Dixon et al. (1991), in their replication study of Green and Gerken (1989), also found significant positive correlations between the degree respondents were bothered by smoke and the support of the respondents for smoking restrictions, using the same scale employed by Green and Gerken (1989).

While successful in finding support for the relationship between self-interest and support for smoke-free public policies, there were areas where the measurement of these constructs could have been improved upon. Specifically, definitions for participants on the number of cigarettes that are associated with the different levels of personal smoking behavior were not provided. Also, all four of the items measuring the degree to which someone was bothered by smoke were not combined into one scale whose psychometric properties could be assessed.

Social Identification

Beyond self-interest, another variable that has been used to evaluate support for political attitudes has been social identification. Social identification has included the need to understand an individual as a function of the groups that he/she identifies as being a part of (Brewer, 1991). This group categorization must be in a way that is logical to the particular individual (Tajfel, 1978). The individual's view of his/her social identity may be affected by context (Fu, Lee, & Chiu, 1999). Thus, it is important to provide a context for individuals to answer questions about their social identities. One

context that can be used for individuals to evaluate group identifications within is political attitudes.

When studying the types of groups that individuals identify with as a function of their social identities, there have been two sets of groups evaluated (Wong-Rieger & Taylor, 1981). The first set of groups has consisted of small, intimate, personalized groups. These groups have been categorized as *primary groups*. Examples of such groups have included friends and family members. The other set of groups have been those groups which are large, impersonal, and formal. These groups have been considered *secondary groups*. Culture and social class have been examples of secondary groups. When evaluating participants' ratings of how important particular groups were to their social identity, participants tended to rate family and friends as significantly higher than all other groups (Wong-Rieger & Taylor, 1981). These findings showed support for the importance of these primary groups to social identity, more important than secondary groups. Identification with primary groups can then be evaluated within the context of support for political attitudes.

Since individuals create their social identities as a function of membership in multiple groups, the relevance of multiple groups to their social identities has been assessed (Tajfel, 1981; Wong-Rieger & Taylor, 1981). Within social identity, the self-concept has been broken up into different social groups, creating a "we" rather than "I" mentality (Brewer, 1991). Based on the fact that these multiple groups have contributed to the individual viewing his/her membership as a "we" membership, it is important to understand how the influence of each of these groups would affect an individual's support for smoke-free policies.

Measuring Social Identification

The measurement of social identification specifically related to smoke-free policies has been limited, and has been described as self-interest rather than social identification. The smoke-free policies study which did include social identification-related items measured attitudes toward smoke-free policies based on their effect on a participant's family and friends (Dixon et al., 1991). Their results demonstrated a significant negative relationship between the smoking behavior of the individual's best friends and his/her support for smoke-free policies, meaning that the more an individual's best friends smoked, the less supportive of smoke-free policies the individual tended to be.

Although Dixon et al. (1991) put these questions under the domain of self-interest, it seems that these questions would only be important depending on how much the participants identified themselves as being close to their relatives, friends, and parents. This is why it is important to look at these questions under the domain of social identification, when the strength of these group affiliations as a function of one's social identity can be assessed (Wong-Rieger & Taylor, 1981).

Not all groups have the same level of importance to an individual. According to Sellers et al. (1998), particular groups have had different hierarchical rankings within an individual's self-concept. This concept has been titled *centrality* and is one of the four components of the Sellers et al. (1998) Multidimensional Model of Racial Identity. Centrality has included understanding how important particular groups are to the individual's self-concept. The centrality concept of the model was used to assess how important race was to the social identity of African Americans. Sellers et al. (1998)

measured this concept of centrality using race and found a relationship between centrality and contact with African Americans, meaning that African American individuals who felt that being African American was important (central) to them had more contact with African Americans.

Settles (2001) further extended this concept of centrality to the groups of women and scientists. Settles (2001) investigated the centrality of being a woman and belonging to a group of scientists. She found that women whose gender was central to their identities reported better psychological outcomes, and women whose scientist identity was central also had better psychological outcomes (Settles, 2001). This concept may be further expanded to apply to an individual's family and friends, the groups that Dixon assessed in his (1991) study on attitudes toward smoke-free policies. The centrality and strength of these groups with respect to an individual's identity, combined with the smoking behavior of those groups, may in turn affect their support for smoking policies that would affect the groups. Through an expansion of asking about best friends' and parents' smoking behavior (Dixon et al., 1991), by the inclusion of the importance of these groups to an individuals' identity, a greater understanding of the influence of these groups on attitudes toward smoking bans may be provided. Further, another primary group which may be important to evaluate is co-workers/peers, in order to see if this group has an impact on individual's attitudes. Co-workers/peers may be specifically important because smoking bans have focused on the idea of protecting individuals in their workplaces (Centers for Disease Control, 2003a; Wasserman, 2001;).

Value Relevance

An additional construct which has been used to predict supportive political

attitudes is value relevance. Value relevance has referred to an individual's beliefs based

on his/her personal and social values (Boninger, Krosnick, & Berent, 1995). According

to Boninger et al. (1995), if an attitude being measured were related to the individual's

personal and social values, then the attitude toward the issue would be strong. This has

been supported by individuals in political psychology, who have suggested that

understanding people's personal values, and how these values influence their views on

candidates and policies, is crucial to understanding their roles in the political sphere

(Kuklinski, 2002). The relationship between an individual's political values and his/her

attitudes about public smoking bans is important to evaluate.

Measuring Value Relevance

Due its limited use as a construct to predict attitudes toward smoke-free policies,

the history of measuring value relevance within this literature was examined. Dixon et al.

(1991) measured value relevance by asking respondents about whether their political

beliefs were more Democrat or Republican, and whether they were Independent,

Moderate, Democratic, or Conservative in their political ideologies. However, no

significant correlations between these measures of political ideology and attitudes in

support for smoke-free policies were found. One reason for these weak relationships may

be that these are not accurate measures of political ideology. A more sensitive measure of

political ideology may produce a significant positive relationship with attitudes in support

of smoke-free public policies.

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An example of a sensitive measure of political ideology was developed and utilized by Fried, Levi, Billings, and Browne (2001). The researchers used it to predict attitudes supporting affirmative action with African Americans. In order to develop a sensitive scale of ideology, they developed a scale that measured political ideology on a continuous scale ranging from individualism to egalitarianism. Significant positive correlations were found between egalitarianism and support for Affirmative Action. The researchers measured political ideology with reference to policies of inequity, poverty, and compassion. Other scales have also measured dimensions of individualism and egalitarianism (Feldman, 1988; Feldman 1999; Kluegel & Smith, 1986). Rather than only using simple political status measures, using a continuous measure of an individual's political ideologies may lead to a better understanding of the degree to which an individual supports an individualistic approach or egalitarian approach toward society. Through the development of a sensitive measure of political ideologies that is relevant specifically to public smoking bans, the utility of its predictive nature toward attitudes supporting smoke-free policies may be better understood.

Boninger, Krosnick, and Berent's (1995) Model of Attitude Strength

While the smoking literature has specifically identified and supported the relationship between self-interest and attitudes supporting public policy, it has only begun to touch on other variables such as social identification and value relevance, which have been used to predict attitudes toward other political issues. Within political psychology, researchers have called for research to move beyond the realm of simply using self-interest to explain why individuals engage in particular attitudes and behaviors (Rahn, Sullivan, & Randolph, 2002). This may be accomplished by applying additional social

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psychological variables such as social identification and value relevance to a model predicting attitudes. This way additional variance in political attitudes could be explained.

A predictive model of political attitudes was developed by Boninger, Krosnick, and Berent (1995). Their model of attitude strength was developed based on five studies they conducted (see Figure 1). The researchers defined attitude strength as an individual's deep concern about a particular attitude, in terms of how important it was to the individual (Boninger et al., 1995). While their model was developed specifically to measure how important the issue was to an individual, it may also be capable of measuring the individual's level of support for an issue.

For the self-interest variable, participants were asked to make interpretations about the self-interest they held about the particular issue. Significant prediction in attitude strength was provided by self-interest (Boninger et al., 1995). An example item was a statement where participants were asked to rate how much "The issue of abortion has direct relevance to my life." While these types of items clearly assessed the self-interest of the issue for the individual, they did so by asking the individual outright to interpret whether or not his/her self-interest was being affected. Another option may have been to ask the individual to respond to items that were assessing self-interest, without asking the participant to interpret how much their self-interest was being affected. For example, an item could have asked the participant, "Have you ever had an abortion?" Or, "Have you ever been pregnant?" These types of items would be able to assess self-interest implicitly, without asking the participant to draw conclusions about the degree of self-interest that the particular issue held for him/her. Instead, participants

Figure 1. Boninger, Krosnick, and Berent (1995) Model of Attitude Strength.

Self-Interest

Social Identification

Value Relevance
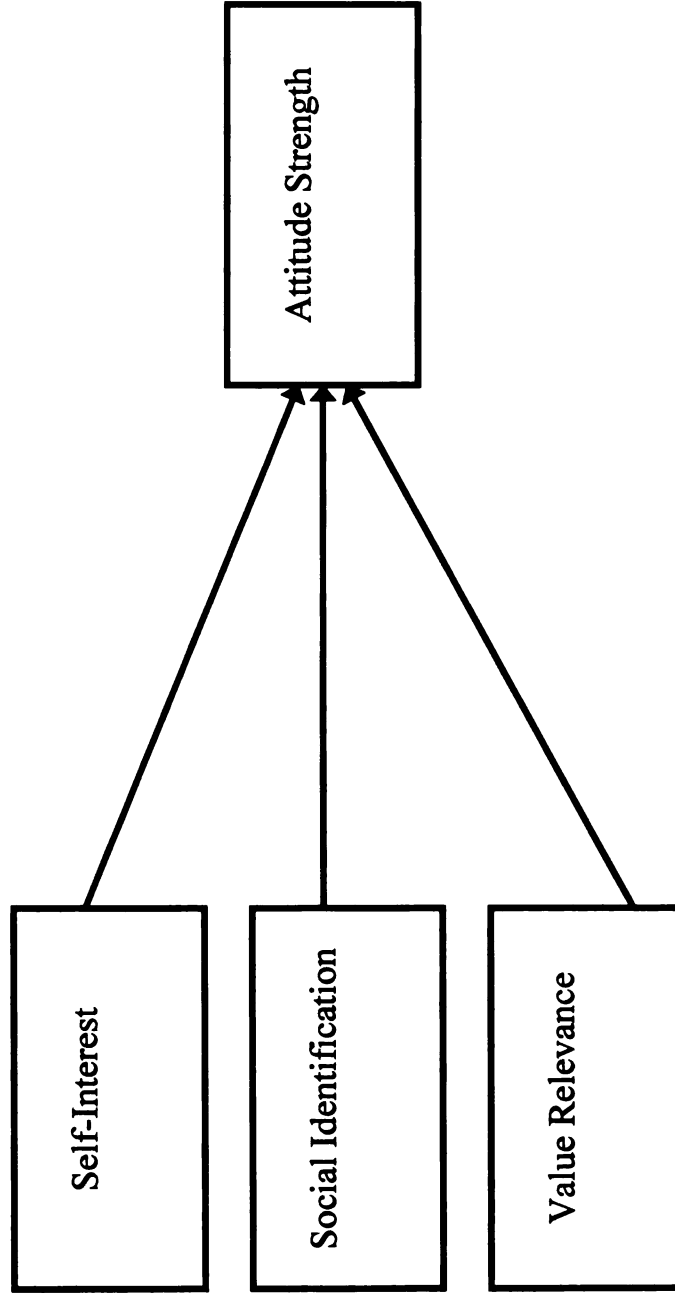
Attitude Strength

would be asked about direct experiences, assuming that those who had such experiences would find the topic more personally relevant.

Social identification was also found to be a significant predictor of attitude strength (Boninger et al., 1995). Participants chose up to five groups (depending on the study), whom they considered to be important to them. Then, the participants were asked to make an interpretation about how much the issue was important to/affected this group. For example, "What percentage of your friends feel that the issue of abortion is important to them personally?" Not only were these types of items asking the participants to try to determine the impact of this variable, but also these participants were being asked to guess about the beliefs of the particular group in question. Another option may have been to attempt to remove some of the interpretive and estimative effects by asking, "What percentage of your friends have had an abortion?" Asking the participants about this same type of information, but trying to remove some of the guessing may have provided a greater understanding of this construct.

The third predictor in the model, value relevance, was also a significant predictor of attitude strength (Boninger et al., 1995). The value relevance items included in the phone survey portion of the study again asked individuals to infer how much the issue of gun control was related to their political values: "How much of your attitude on the issue of gun control is based on your basic values?" As with the self-interest and social identification variables, a greater understanding of the relationship between the predictor variables and the outcome variable of attitudes may have been obtained had participants not been asked to make as great of inferences. An alternative would have been simply to ask the participants about their political values without asking them to relate them to the

issue at hand. In the written studies, the researchers did include these types of items; however, the large number of items and format of the items were not easily adaptable to a phone survey methodology.

Overall, these researchers found that all three predictors (self-interest, social identification, and value relevance) were significantly related to attitude importance concerning the issues of abortion and gun control, with R^2 values that ranged from .43 for the phone survey up to .53 for one of the written surveys. (Boninger et al., 1995). The researchers' usage of the attitude strength model with controversial political issues provided a strong basis for its usage in reference to banning smoking in public places; however, limitations in the measurement required a redevelopment of the measurement strategies. The most prevalent methodological strain was the reliance on participants to make their own inferences about the relationships between the predictors and the attitude variable.

Intended Behaviors in Support of Smoke-Free Public Policies

In order to expand the understanding of individuals' feelings about public smoking bans beyond attitudes, the utility of adding the variable of intended behaviors to the attitude model was explored. Studies in the literature that have measured support for smoke-free policies have done so only on the dimension of attitudes of support for such policies (Brooks & Mucci, 2001; Dixon et al., 1991; Green & Gerken, 1989). While *attitudes* of support are an important construct to assess (Boninger et al., 1995; Strobl & Latter, 1998), it is also important to understand individual *behaviors* (intended or actual) that also represent support for smoke-free public policies. Ratner and Miller (2001) provided insight as to why it is important to look not just at attitudes in support of public

policy, but also at intentions/behaviors in support of public policy (e.g., signing a petition, attending a meeting). As Ratner and Miller (2001) explained, "not everyone who cares about a cause will feel equally comfortable taking action on its behalf" (p. 6).

Green and Cowden (1992) concluded that self-interest was a stronger predictor of actual behavior than of attitudes. They measured the impact of self-interest on political behavior. Specifically, they assessed parents whose children were bused to other schools for integration purposes (self-interest) and their participation in anti-busing organizations. Green and Gerken (1992) found that the parents whose children were being bused were significantly more likely to participate in anti-busing activities. Young, Borgida, Sullivan, and Aldrich (1987) also were able to find significant support for the relationship between self-interest and behaviors, specifically for voting behavior. In light of the need to include behaviors in the measurement of support for public policy (Green & Cowden, 1992; Ratner & Miller, 2001), it is also important to measure behaviors that support smoke-free public policies. Since the state where residents were interviewed does not currently have smoking bans in all public places, actual voting behaviors and other behaviors related to support/lack of support for these policies could not be measured. For this reason, intended behaviors in support of the policies were assessed. Since previous studies assessing the relationship between self-interest and behavior were measuring actual behaviors, it is not clear whether self-interest will predict *intentions* to act.

In order to address the need for the measurement of intended behaviors related to support for smoke-free policies, Azjen's Theory of Planned Behavior (TPB) was combined with the Boninger et al. (1995) model of attitude strength in an attempt to understand the construct of public support for smoke-free policies more fully. According

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to Azjen's Theory of Planned Behavior, attitudes toward a particular concept would predict intentions to act on behaviors in line with that particular attitude (Azjen, 1991). This theory has been applied within the smoking literature to the study of the relationship between youth attitudes toward smoking and their intentions to smoke (Farrelly et al., 2002). The researchers found that youth attitudes toward smoking were positively related to their intentions to smoke. While the Farrelly et al. (2002) study did not measure support for smoke-free policies, it does provide support for applicability of the relationship between attitudes and intended behaviors to the smoking literature.

Since the predictors of self-interest, social identification, and value relevance have been shown to predict attitudes (Boninger et al., 1995), self-interest has been shown to predict behaviors, and attitudes have been shown to predict intended behaviors (Azjen, 1991), the impact of these three predictor variables on attitudes and intended behaviors was assessed in the present study. The addition of the variable of intended behaviors to the Boninger et al. (1995) model of attitude strength, based on Azjen's TPB, was a way to determine whether this variable was able to contribute to a greater understanding of participants' beliefs about public smoking bans.

In addition, the study provided a further test of the psychological theory of attitude strength developed by Boninger (1995), as well as the usefulness of using this model to explain political attitudes in support of smoke-free policies. Further, the utility of using intended behaviors to further examine support for smoke-free policies was assessed.

Identification of Variables for the Present Study

Self Interest

In the present study, the predictor of self-interest included two dimensions: personal smoking behavior and the degree to which the individual was bothered by smoke (Dixon et al., 1991; Green & Gerken, 1989). The first dimension assessed whether those individuals who had high incidences of personal smoking behavior would tend to have weak attitudes of support for smoke-free public policies, policies which would reduce their opportunity to smoke. The second dimension evaluated was whether those individuals who reported a high degree of being bothered by smoke would have stronger attitudes of support for smoke-free public policies.

Social Identification

The predictor of social identification measured two dimensions of social identification for each of the three groups assessed: family, friends, and co-workers. The first dimension of social identification that was included was a group identification scale. Participants were asked how strongly each of the respective groups (family, friends, and co-workers/peers) contributed to their social identities (Sellers et al., 1998). The second dimension assessed was the smoking behavior of each of the three groups. The purpose of including both of these dimensions of social identification was to understand the interaction of influence of closely identified social groups and their smoking behaviors on an individual's opinion of smoke-free public policies. It was predicted that the influence of the smoking behavior of each of the three groups on attitudes about smoking bans would be moderated by how strongly that group was important to the individual's social identity.

Specifically, for each of the groups assessed (family, friends, and co-workers/peers), the expectation was that the stronger the participant identified with each of these groups, the strength of the participant's level of support for smoke-free policies would be affected by the smoking behavior of those groups. For example, a participant who identified strongly with a group in which a large proportion of individuals smoke may have been less supportive of smoke-free policies that infringe on the rights of that particular group, regardless of his/her personal smoking behavior.

Value Relevance

Finally, the predictor variable of value relevance assessed political ideologies. Political ideologies were measured on a scale that assessed the degree of egalitarianism held by the individual. It was expected that those individuals who held a more egalitarian political orientation would have higher degrees of support for smoking bans, which would do more to protect public health. Also, those individuals who held less egalitarian (more individualistic) views would be less supportive of public smoking bans.

Rationale for the Present Study

While past studies have investigated levels of public support for smoking bans (Brooks & Mucci, 2001; Dixon et al., 1991; Green & Gerken, 1989), these studies have done so only in the attitudes domain. In terms of measuring these attitudes, a solid overall framework for assessing the predictors of these attitudes has not been established in the smoke-free policies literature. In the absence of an attitude model in this literature, the current study adapted an attitude strength model that was developed to measure the strength of other political attitudes. Instead of using an outcome of attitude strength as

used by Boninger et al. (1995), the present study sought to measure whether participants held high levels of attitudes supporting or opposing public smoking bans.

In addition to altering the outcome construct, the measurement of the predictors was also changed for the current study. There were two major reasons why the measurement of the three predictor constructs (self-interest, social identification, and value relevance) had to be altered. First, the measures had to be adapted to fit the issue of smoke-free policies, and as a result, to be more in line with the way these constructs had begun to be measured in the smoke-free policies literature. The second major reason the format of the scales had to be changed for the present study was due to the fact that the previous scales required the participants to make a great deal of inferences. Participants in these studies were expected to assess whether or not particular issues were related to their self-interests, rather than asking about their direct experiences and allowing the researcher to then test whether a relationship existed between their views and their self-interests. The present study attempted to reduce the number of inferences that the participants had to make.

Further, the present study explored the ability for the model of support for public smoking bans to include the addition of intended behaviors. To inform policy, an attempt was made to provide policymakers with information about individual intentions to act with regard to these policies. Beyond attempting to explain intentions to act in support or opposition to public smoking bans, the present study also sought to understand how much of a role attitudes played in predicting individual intentions to act. This study sought to understand the predictors of both attitudes and intended behaviors.

Model for the Present Study

The model tested in this study proposed that all three of the predictor constructs—self-interest, social identification, and value relevance—would predict attitudes of support for smoke-free policies (see Figure 2). The predictive relationship between self-interest, social identification, and value relevance and the outcome variable of attitudes was theoretically based on the Boninger et al. (1995) model of attitude strength. In order to provide a fuller understanding of individual's feelings about public smoking, intended behaviors were added to the model previously proposed by Boninger et al. (1995). The path between attitudes and intended behaviors has also been frequently documented in the literature, under the framework of Azjen's Theory of Planned Behavior (TPB). Within the present model, it is proposed that attitudes in support of smoke-free behaviors may lead to intended behaviors that would support such policies. By adding the variable of intended behaviors, the present study sought to support the need within political psychology to challenge individuals to consider what they would actually be willing to do in support of their attitudes about a particular policy.

Hypotheses

Hypothesis 1

Self-interest, social identification, and value relevance would independently predict attitudes supporting smoke-free public policies. Personal smoking behavior (dimension of self-interest) would negatively affect attitudes, and degree bothered by smoke (dimension of self-interest would positively affect attitudes. Social identification would negatively predict attitudes, and value relevance would positively predict attitudes.

Hypothesis 2

Intended behaviors would be an important addition to the model, with attitudes toward smoking and smoke-free public policies mediating the relationship between the predictor variables of self-interest, social identification, and value relevance, and the outcome of intended behaviors.

Hypothesis 3

Within the construct of social identification, participants' identification with a particular group (family, friends, and co-workers/peers/other) would moderate the relationship between the smoking behavior of that group and participants' attitudes about smoke-free public policies.

Figure 2. Model Evaluated in Present Study

Self-Interest Dimensions

| Personal Smoking Behavior |
| Degree Bothered by Smoke |

Social Identification Dimensions

| Smoking Behavior of Family |
| Smoking Behavior of Friends |

| Smoking Behavior of Co-workers/peers/ or other significant group |

Value Relevance

| Degree of egalitarianism |

ID with Family

ID with Friends

ID with Co-workers/Peers

Attitudes about Public Smoking Bans

Intended Behaviors with regard to Public Smoking Bans

−

+

−

−

−

+

Note: The variables displayed in the figure as "ID" represent identification with a particular group (family, friends and co-workers/peers).

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CHAPTER 2

Methods

Sampling Technique

Participants were selected from a random number database developed by an independent sampling firm. Telephone numbers included in the database were pre-screened by the sampling firm in order to reduce the number of businesses and disconnected telephone numbers in the database. Random digit dialing was used as an alternative to only using listed telephone numbers. By only using listed telephone numbers, those households who did not list their telephone numbers would not be included, and would reduce the quality of the sample (Bezilla, 1992).

Initially, the researcher ordered a total of 1450 numbers from the independent sampling firm. After the sampling firm screened these numbers for businesses and disconnected numbers, the researcher received a total of 1132 telephone numbers from which to sample. Of these numbers, final usable data was obtained for 230 participants. There were 288 refusals out of the 584 contacts made, which was a refusal rate of 49.3%. The refusal rate is in accordance with the increasing reluctance by households to participate in phone surveys (Tucker, Lepkowski, & Piekarksi, 2002), and is similar to that of Green and Gerken (1989), which was 50%. See Figure 3 for a chart of how the bank of numbers was narrowed down to 230 individuals.

Within the database of 1132 numbers, additional disconnected numbers and businesses were included. The 1132 numbers were less than the anticipated amount of numbers needed to obtain 230 completed telephone interviews. According to information

Figure 3. Flow Chart of Usable Telephone Numbers
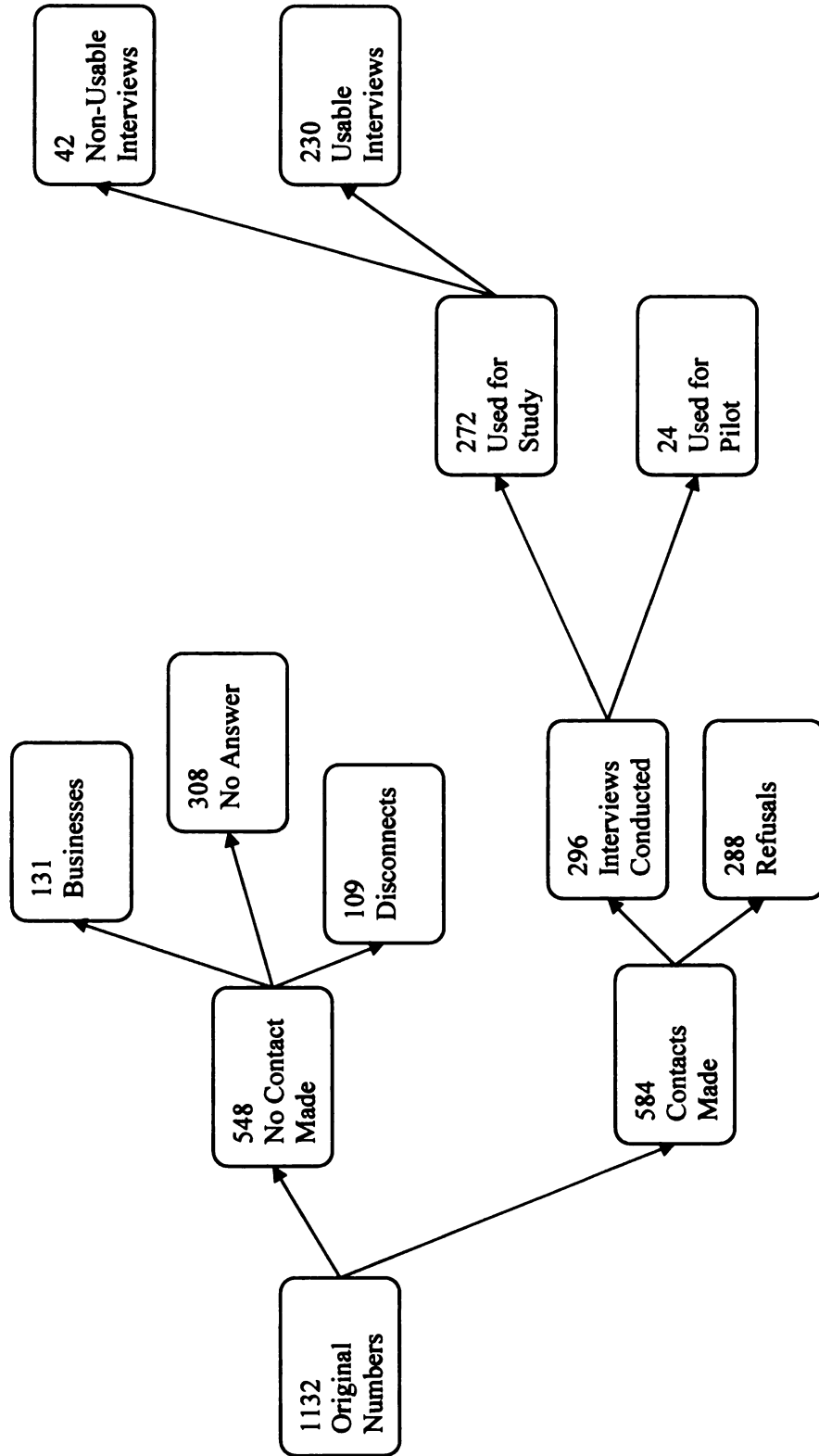
Note: Although the sample was pre-screened for disconnected numbers and businesses, the screening left a significant number of such numbers in the sample. There were no significant differences between the data obtained from the 42 non-usable interviews and the 230 usable interviews.

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provided by the sampling firm, the estimate for the total telephone numbers necessary can be calculated from the "Number of telephone numbers needed" formula.

Number of telephone numbers needed = $\dfrac{CI}{(WPR)*(I)*(CR)}$

In the formula, "CI" represents the number of complete interviews needed. In the denominator, "WPR" represents the working number rate, which is the percent of telephones that are connected and not businesses. Also in the denominator, "I" represents the proportion of eligible individuals in the potential population pool. Finally, "CR" represents the estimated completion rate of interviews. This rate is a percent determined by the length and sensitivity of the items included in the survey. In the present study, 230 interviews were completed (CI), the working number rate was approximated at 65 %, the incidence of eligible residents in the sample, English-speaking and 18 years old, was approximately 85%, and the completion rate (CR), based on sensitive matter and a 6-20 minute interview was estimated at 30%. According to the formula, the estimated number of telephone numbers that would be needed to achieve a sample size of 230 was 1388. The present study was able to obtain 230 interviews from a database of only 1132 numbers.

Number of telephone numbers needed = $\dfrac{230}{(.65)*(.85)*(.30)}$

Sample

Two hundred thirty residents of an industrialized county in a large Midwestern state completed telephone interviews based on a random-digit telephone number database. The sample was 67% female, 84% Caucasian, and an average of 43 years old. Approximately half of participants had at least a 2-year college degree (50%) and were registered voters in the state (89%). The sample is fairly representative of the county,

which is a population that is primarily female (51.7%) and largely Caucasian (79.5%), (U.S. Census, 2000). Demographic information is displayed in Table 1.

Procedures

Interviewers

Five undergraduate students were selected to participate on the research project as interviewers. They received course credit in return for their participation. They underwent a thorough standardized training process to prepare for the interviews. The training consisted of four sessions as well as related work in between the sessions. During the training process, interviewers learned the items on the questionnaire, the database for the project, and interview/project procedures. A complete outline of the training sessions is detailed in Appendix N. Interviewers had a weekly schedule during which they were responsible for conducting interviews. All five interviewers remained on staff for the duration of data collection.

Interview Procedure

The interviewers piloted the study with a sample of 24 individuals. The purpose of piloting the interview was to evaluate and improve the quality of the administration procedures. Upon completion of the pilot study, changes were made to the wording and order of several of the items on the questionnaire. Both the pilot interviews and the study interviews followed the same procedure.

The interview procedure began with the interviewer selecting and calling a household listed on the random number list. If the number was disconnected or a business, then the interviewer indicated so on the list and moved on to the next number.

Table 1

Participant Demographic Information

Gender			
Females	66.5 %	N =	153
Males	33.5 %		77
Age	M = 43, SD = 15.54		
Race/Ethnicity			
African American	9.6 %	N =	22
Caucasian American	83.5 %		192
Hispanic American	1.3 %		3
Bi-racial/multi-racial	2.6 %		6
Other	3.0 %		7
Education			
Grade 8/Some high school	2.6%	N =	6
High School Diploma/GED	18.3%		42
Some college	26.5%		61
2-year college degree	17.8%		41
4-year college degree	21.3%		49
Graduate degree	11.3%		26
Other	2.2%		5
Number of Children (under 16)	M = .71, SD = 1.263		
Registered voter			
Yes	88.7 %	N =	204
No	11.3 %		26

If there was no answer at the household, the interviewer indicated so on the list by writing NA (no answer). NA households were tried repeatedly at different times of the day, different days of the week, until the household could be reached or the study ended. There were some NA households that were not reached throughout the course of the study.

When an individual over the age of 17 answered the phone at a household, he/she was the individual from that household who was asked to participate in the study. After the individual answered the phone, the interviewer explained the purpose of the study (Appendix A). This was to ensure that residents clearly understood what would be asked of them during the course of the interview. The interviewer also asked whether the individual was at least 18 years old, since the questions asked about intentions to vote. If the individual was not at least 18 years old, the interviewer asked to speak to an individual in the household who was at least 18. The interviewer then explained to the participant that participation in the interview was voluntary and that he/she could end the interview at any point. The interviewer also ensured that the respondents understood that they had the right to decline answering any question if they chose. Furthermore, participants were told that their answers were going to be kept confidential, and that their answers were going to be used only to summarize the information collected in this study. Once the interviewer clearly explained this information to the participant, the interviewer asked the participant, "Do you give permission to participate in this short survey about smoking in public places?" If the participant refused, the interviewer thanked him/her for his/her time and ended the call. Then, a refusal was entered for that household, in order to avoid calling that household again.

If the participant agreed to participate in the phone interview, the interviewer then proceeded to go through the questionnaire with the participant, documenting the participant's answers on the questionnaire during the interview. See Appendix C for a copy of the questionnaire used in the study. The interview consisted of demographic items (See Appendix B), self interest items (see Appendices D & E), social identification items (see Appendices G & H), value relevance items (see Appendix J), attitude items (see Appendix L), and intended behavior items (Appendix M). Upon completion of the interview, the interviewer thanked the participant for his/her time, and again reminded the participant that his/her identity and responses would be kept confidential. Overall, it took approximately two months to complete the interview process.

Measures

During the course of the interview, participants completed measures of the three predictors: self-interest, social identification, and value relevance. Participants also completed outcome measures of attitudes supporting smoke-free public policies and intended behaviors in support of these public policies. Items for the measures were adapted from pre-existing measures or written by the researcher.

Self Interest

Personal smoking behavior. This was the first dimension of self-interest assessed. The personal smoking behavior scale was adopted from the Dixon et al. (1991) scale. This was a one-item measure, which asked to participants to "Please indicate which of the following statements best describes your personal smoking behavior." Definitions for the number of cigarettes smoked in order to be classified as an "occasional," "light," "moderate," or "heavy" smoker were obtained from a National Health Survey (1997).

Other forms of tobacco use were not measured, because this study was particularly interested in how individuals felt about public cigarette smoking and exposure to cigarette smoke. Since this was a single item measure, there was no reliability value. See Appendix D for the scale.

Smoke bother scale (α = .74). This was the second dimension of self-interest assessed and included a total of 4 items. For the smoke bother scale, items 1, 2, and 3 were taken from the smoking behavior scale of Dixon et al. (1991). An example from this scale is: "How often has being around cigarette smoke caused you to have a headache?" Item 4 was adapted from Dixon et al. (1991). The items were measured on a scale ranging from 0 = Never to 4 = Always. This scale did not have a previously reported reliability value. See Appendix E for the scale.

Social Identification

Group identification. The measure of group identification was comprised of three sub-scales: one for each of the three social groups evaluated—family, friends, and co-workers/peers/other group. The social groups of family and friends were developed from Dixon et al. (1991), and the group of co-workers/peers/other group was included because of the workplace implications of smoke-free policies. Each of the three subscales contained 3 items. The first 2 items in each subscale were adapted from the Sellers et al. (1998) centrality scale (α ranged from .70 to 79). An example of these items is: "My family reflects who I am." These items were measured on a 6-point Likert-scale, ranging from 1= strongly disagree to 6= strongly agree. The last item in each of the three subscales asked participants about how much time they spent with each of the three groups per week. An example item is: "On average, how many hours do you spend per

week with your family members?" There were no options for participants to choose from, they were just instructed to give their estimate of this value. See Appendix G for the scale, reliability not given due to limited number of items.

Group smoking behavior. The measure of group smoking behavior consisted of three subscales: Each subscale had one item that assessed the smoking behavior of that particular social group. There was one subscale for family, one for friends, and one for co-workers/peers/other group. Each subscale evaluated what proportion of individuals in that group smoked. A sample item is: "How many of your family members currently smoke?" The participant responses were measured on a 5-point scale, ranging from 0=none to 4=all. See Appendix H for the scale, reliability not given since scales consisted of single items.

Value Relevance

The third predictor variable, value relevance $(\alpha = .69)$, was measured by participants providing answers to questions about their political ideologies and consisted of 6 items. A scale measuring participants' political ideologies was developed based on ideas and items primarily from pre-existing scales. The concept of the political ideology scale was adapted from Fried et al. (2001), $(\alpha = .63$ for sample 1, $\alpha = .69$ for sample 2). Item 4 was taken from the Fried et al. (2001) scale. Item 2 was taken from the Egalitarianism Scale (Kluegel & Smith, 1986), $(\alpha = .68)$. Item 6 was adapted from the American National Election Studies Egalitarianism Scale (Feldman, 1988), $(\alpha$ ranged from .52 to .71). Items 1, 2, and 5 were written by the researcher, for this particular study. Items were measured on a 6-point Likert-scale, ranging from 1=strongly disagree

to 6=strongly agree, and an example item is: "The government should create more policies to protect public health." See Appendix J for the scale.

Attitudes About Smoke-Free Policies

The Attitudes scale about smoke-free policies (α = .79) measured participants' attitudes about smoking and smoking bans in public places and consisted of 7 items. Due to lack of a complete existing measure, the current measure consisted of items written by the researcher and items from an array of pre-existing scales. For this scale, item 2 was adapted from the Stobl and Latter (1998) scale (no reliability reported). Item 1 was taken from the Brooks and Mucci (2001) scale (no reliability reported). Item 5 was taken from the Dixon et al. (1991) scale (no reliability reported). Item 6 was adapted from, and Item 7 was taken from the Shore, Tashchian, and Adams (2000) scale (α = .90). The researcher wrote items 3 and 4 in order to provide a more thorough scale on attitudes toward smoke-free policies. An example item is: "Smoking should be banned in all indoor public places." Attitudes were measured on a 6-point Likert-scale ranging from 1 = strongly disagree to 6 = strongly agree. The reason for having 6 response choices was to obtain variance in participant answers. A middle value was deliberately left out of this Likert-scale in order for individuals to decide which direction they leaned toward on these controversial issues (Krosnick et al., 2002). See Appendix L for the scale.

Intended Behaviors in Relation to Smoke-Free Public Policies

The Intended Behaviors scale (α = .83) consisted of 6 items and measured behaviors participants would be willing to engage in to support or oppose smoke-free public policies. The author wrote all of the items, since previous scales measuring support for smoke-free policies only measured this construct in terms of attitudes. An

example item is: "If restaurants had complete smoking bans, I would eat out more."

Items were measured on a 6-point Likert-scale, ranging from 1 = strongly disagree to 6 =

strongly agree. Ideas for some of these items were developed from Parry, Moyser, and

Day (1992). See Appendix M for the scale.

CHAPTER 3

Results

Due to lack of pre-existing measures available that could assess the constructs

needed for the present study, the researcher had to write items and combine items from

scales in order to create the scales for the present study. For this reason, the items within

the particular scales were examined carefully for their fit within that scale. Items were

discarded and changes were made to scales. The results section will first document the

changes that were made to the individual scales, then proceed to discuss the analyses that

were employed to evaluate Hypothesis 1, Hypothesis 2, and Hypothesis 3.

Measurement Development

Self Interest

Personal smoking behavior. This was a one-item measure, so no reliability

analyses or item-fit statistics could be performed.

Smoke bother scale. While this scale was short in length, consisting of 4 items,

reliability and corrected item-total correlations were examined. Overall, the scale had a

reliability of $\alpha = .74$, indicating acceptable reliability. Corrected item-total correlations

for these 4 items ranged from .44 to .59, indicating that the items in the scale were

correlating well with the other 3 items in the scale.

Social Identification

Group identification—family. This scale was 3 items in length. The first two

items were adapted from the Sellers et al. (1998) Centrality scale. The first item was "I

have a strong sense of belonging to my family." The second item was "My family reflects

who I am." The third item was written by the researcher, and asked, "On average, how

many hours do you spend per week with your family members?" This item correlated much lower with the other two items, (r = .18 with Item 1, P < .01) and (r = .09 with Item 2, not significant). Item 1 and Item 2 had a higher correlation (r = .33, p < .01). Item 3 was dropped from further analyses.

Group identification—friends. This scale was 3 items in length. The first two items were adapted from the Sellers et al. (1998) Centrality scale. The first item was "I have a strong sense of belonging to my friends." The second item was "My friends reflect who I am." The third item was written by the researcher, and asked, "On average, how many hours do you spend per week with your friends?" The correlation pattern is similar to the pattern with the family identification items. Item 3 did not have significant correlations with either Item 1 (r = .03, not significant) or Item 2 (r = .00, not significant); however, Item 1 and Item 2 correlated highly (r = .63, p < .01). Item 3 was dropped from further analyses.

Group identification—co-workers/peers/other group. This scale was also 3 items in length, with the first 2 items adapted from Sellers et al. (1998) and Item 3 written by the researcher. For this scale, if individuals were not employed or a student, they responded to these items based on another group that they spent a significant amount of time with. In these cases, the participant provided the researcher with the type of group. The first item was "I have a strong sense of belonging to my co-workers/peers/other group." The second item was "My co-workers/peers/other group reflect who I am." The third item was "On average, how many hours do you spend per week with your co-workers/peers/other group?" In this scale, the relationship of Item 3 with the other two items was significant, but was negative. The correlation of Item 3 and Item 1 was (r = -

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.13, p < .05) and the correlation of Item 3 and Item 2 was (r = - .21, p < .01). This would indicate that participants who spent more time with the identified group identified less with that group. It is believed that this relationship was confounded by the ambiguity of the group definition, and Item 3 was again dropped from further analyses. Item 1 and Item 2 correlated highly (r = .61, p < .01).

Group smoking behavior. This was a one-item measure for each of the three groups, so no item-fit or reliability analyses could be performed.

Value relevance. Overall, this 6-item scale had a reliability of α = .58, and corrected item-total correlations ranging from .10 to .57 (Appendix O). This scale had low reliability and a broad range of corrected item-total correlations, indicating that some of the items may not have fit well in this scale. Item 6 and Item 5 had the lowest corrected item-total correlations, .10 and .14, of all the items. When those items were removed, the range of corrected item-total correlations became much smaller, ranging from .26 to .57. Alpha also improved, if these 2 items were removed, to a new value of .69. These two items were reverse coded items, and the reverse coding may have affected their ability to fit with the other items in the scale. The original scale (see Appendix J) was altered by removing Item 5 and Item 6. For the revised scale, which contains 4 items, see Appendix I.

Attitudes scale. This 7-item scale had a reliability α = .79. Corrected item-total correlations ranged from .34 to .67, indicating that the items fit moderately well together in the scale (Appendix P). No items were removed.

Intended behaviors scale. This 6-item scale had a reliability of .83, with corrected item-total correlations ranging from .44 to .72 (Appendix Q). This reliability and corrected item-total correlation values indicated that these items fit well together. No items were removed.

Relationship between Attitudes scale and Intended behaviors scale. While both the Attitudes scale and Intended Behaviors scale had acceptable reliability values and corrected item-total correlation values, the correlation between these two scales indicated a need for further analysis. The correlation between these two scales was significant, with $r = .79$, $p < .01$. The correlation between these two scales when corrected for unreliability was .98. This value is almost 1.0, indicating that these two scales correlate almost perfectly. This correlation challenged whether these two scales were in fact measuring different constructs.

A principal axis factor analysis was employed with all of the 7 attitude items and 6 intended behaviors items grouped together. The initial eigenvalues in the unrotated solution revealed that much of the variance (43.73 %) was being explained by one factor, with an eigenvalue of 5.68. The factor analysis displayed two other factors that had eigenvalues over 1; however, these factors accounted for little of the explained variance. Factor 2 had an eigenvalue of 1.314 and accounted for 10.11 % of the variance. The solution with varimax rotation indicated that five items loaded highest on factor 1, four items loaded highest on factor 2, and four items loaded highest on factor 3. The 4 items in Factor 2 were all recoded items, indicating that the reason for this factor being differentiated from Factor 1 may have been a result of the directionality of the items only. The principal axis varimax rotation was done in order to evaluate whether or not the

attitudes items and intended behaviors items would load onto separate factors; however, all three of the factors contained a mix of items from these two scales that did not have theoretical justification. Overall, the nearly perfect correlation between these two scales when corrected for unreliability, combined with the results from the factor analysis, supported the combination of these two scales into one scale for the purposes of this study.

It was apparent that the way these two scales were constructed did not allow them to measure different constructs in this data set, and as a result, were combined to form the Attitudes and Intentions about Smoking Bans Scale (see Appendix K). This scale contained a total of 13 items and had a high α value of .89, with corrected item-total correlations ranging from .38 to .77 (Appendix R). Further analyses were done with the Attitudes and Intentions about Smoking Bans Scale instead of the separate Attitudes Scale and Intended Behaviors Scale.

Overall Results

The outcome measure of interest in this study was the Attitudes and Intended Behaviors about Smoking Bans Scale. The overall mean score on this scale was 4.01 with a standard deviation of 1.16 (see Table 2). In this study, participants as a whole had pro-smoking ban attitudes and intentions; however, the strength of these attitudes was not that strong. On the 6-point Likert-scale that was used to measure this variable, a "4" was in the positive direction, but was the lowest of the positive values. A value of "6" was the highest possible positive value. The average personal smoking behavior of individuals in the sample was individuals who were former smokers (M = 1.1). The sample was comprised of 21.7% current smokers, 25.7% former smokers, and 52.6%

Table 2

Variable Descriptive Statistics

Scale	Mean	SD
Self Interest		
Personal smoking behavior	1.10	1.59
Smoke bother scale	1.67	1.06
Group Smoking Behavior		
Family smoking behavior	0.80	0.98
Friends' smoking behavior	1.04	0.96
Co-workers/peers/other smoking behavior	1.18	0.97
Value relevance	3.55	1.22
Attitudes and intentions about smoking bans	*4.01*	*1.16*

never smokers. The percentage of current smokers in the sample (21.7%) corresponded closely with the current national average of 23.4% adult smokers (Centers for Disease Control, 2003b). Participants were rarely to sometimes bothered by being around smoke (M = 1.67). As a whole, about less than half of participants' family (M = .80), friends (M = 1.04), and co-workers/peers/other group (M = 1.18) were smokers. Individuals held political values that were in the middle in terms of being individual versus egalitarian, but leaned in the egalitarian direction (M = 3.55). The correlations between all of the variables can be found in Table 3.

Evaluation of Hypotheses

Hypothesis 1

Hypothesis 1 stated that self-interest, social identification, and value relevance would independently predict attitudes supporting smoke-free public policies. Due to the combining of the Attitudes Scale and Intended Behaviors Scale, the combined scale replaces "attitudes" in this hypothesis.

Self-interest was separated into two dimensions. Dimension 1 was personal smoking behavior and dimension 2 was the smoke bother scale. Since these two dimensions were measuring different aspects of self-interest, their impacts on the attitudes/intentions variable were measured separately.

For the social identification construct, only the group smoking behavior dimension was included. The moderating effect of group identification (dimension 2), was not significant for any of the three groups, and was not included.

Table 3

Correlations Among Variables

Variable	M	SD	1	2	3	4	5	6	7
1. Personal smoking behavior	1.10	1.59	--						
2. Smoke bother scale	1.67	1.05	-.45	(.74)					
3. Family smoking behavior	.80	.98	.24	-.09	(.33)				
4. Friend smoking behavior	1.04	.96	.47	-.37	.34	(.63)			
5. Co-workers/peers/other smoking behavior	1.18	.97	.38	-.15	.20	.50	(.61)		
6. Value relevance	3.55	1.22	-.16	.24	-.04	-.05	-.01	(.69)	
7. Attitudes and intentions about smoking bans	4.01	1.16	-.55	.65	-.27	-.44	-.28	.36	(.89)

Note. |r| < .10 are not significant. . |r| ≥ .20 are significant at the p < .05 level. |r| > .20 are significant at the p < .01 level. Reliability values (α) are displayed on the diagonal. Variables 2 –4 are each 2-item scales, so the correlation between the 2 items is reported instead of α. Variable 1 is a 1-item scale.

The 4-item Final Value Relevance Scale (see Appendix I) was the scale used to measure value relevance in the evaluation of Hypothesis 1.

The results of the regression analysis are detailed in Table 4. None of the demographic variables were significant predictors in this study. Both dimensions of self-interest (personal smoking behavior, smoke bother scale) were significant predictors of attitudes and intentions about smoking bans. The unstandardized regression weight on personal smoking behavior was -.17, p < .01, indicating that those individuals who were heavier smokers tended to be less supportive in their attitudes and intentions about smoking bans. The unstandardized regression weight on the smoke bother variable was .49, p < .01, meaning that those individuals who tended to be more bothered by being around smoke tended to have more supportive attitudes and intentions about smoking bans.

The group smoking dimension of social identification had differential effects on attitudes and intentions about smoking bans based on which group was being asked about. Family smoking behavior was the only significant predictor of attitudes and intentions about smoking bans of the three groups evaluated. The unstandardized regression weight on family smoking behavior was -.14, p < .05, indicating that those individuals who had a higher proportion of family members that smoked tended to have less pro-smoking ban attitudes and intentions. Neither friend smoking behavior (B = -.10) nor co-workers/peers/other group smoking behavior (B = -.08) were significant predictors of attitudes and intentions about smoking bans.

The third construct, value relevance, was a significant predictor of attitudes and intentions about smoking bans. The unstandardized regression weight for this variable

Table 4

Regression Model for Hypothesis 1

Variable	*B*	*SE B*	β
Self Interest			
Personal smoking behavior	-.17	.04	-.23**
Smoke bother scale	.49	.06	.45**
Group Smoking Behavior			
Family smoking behavior	-.14	.06	-.12*
Friends' smoking behavior	-.10	.07	-.08
Co-workers/peers/other smoking behavior	-.08	.06	-.07
Value relevance	.20	.04	.21**

Note. **$p < .01$, *$p < .05$. R^2 was .578.

was .20, $p < .01$. The significance of this regression weight on value relevance indicates that individuals who held more egalitarian-oriented political values also had stronger pro-smoking ban attitudes and intentions.

Overall, Hypothesis 1 can be considered supported since at least one dimension of each of the predictors was significant; however, social identification itself was not a complete predictor of attitudes and intentions about smoking bans. The only aspect of social identification that was significant in this regression model was family smoking behavior. The two dimensions of the self-interest construct and the value relevance construct were both complete predictors of attitudes and intentions about public smoking bans.

Hypothesis 2

Hypothesis 2 stated that intended behaviors would be an important addition to the model, with attitudes toward smoking and smoke-free public policies mediating the relationship between the predictor variables of self-interest, social identification, and value relevance, and the outcome of intended behaviors.

Due to the fact that the original attitudes scale and original intended behaviors scale used in this study ended up measuring a similar construct, and were combined, the intended behaviors variable did not make a significant addition to the overall model. When running analyses with intended behaviors as the dependent variable, the predictor variables had nearly identical regression weights in their prediction of intended behaviors as in their prediction of the combined scale (See Table 5). This lent further support to the combination of these two scales into one. With the scales combined into one, the

Table 5

Regression Weights with Intended Behaviors as the Dependent Variable

Variable	B	SE B	β
Self Interest			
Personal smoking behavior	-.23	.05	-.27**
Smoke bother scale	.49	.07	.39**
Group Smoking Behavior			
Family smoking behavior	-.20	.07	-.15**
Friends' smoking behavior	-.06	.08	-.04
Co-workers/peers/other smoking behavior	-.09	.07	-.06
Value relevance	.21	.05	.20**

Note. **p < .01, *p < .05.

attitudes variable could not mediate the relationship between intended behaviors and the predictors; therefore, Hypothesis 2 was not supported.

Hypothesis 3

Hypothesis 3 stated that within the construct of social identification, participants' identification with a particular group (family, friends, and co-workers/peers/other group) would moderate the relationship between the smoking behavior of that group and participants' attitudes about smoke-free public policies. (Due to the combining of the Attitudes Scale and Intended Behaviors Scale, the combined scale replaces "attitudes" in this hypothesis). This provided that the relationship between family smoking behavior, friends' smoking behavior and co-workers/peers/other group smoking behavior and the Attitudes and Intentions about Smoking Bans Scale would change over the level of group identification for each of the three respective groups..

The first step in evaluating Hypothesis 3 was to create interaction terms for each of the three groups. Smoking behavior was multiplied by group identification to create the interaction term for each respective group.

The next step was to run a hierarchical regression model with Attitudes and Intentions about Smoking Bans as the dependent variable. In the first step, personal smoking behavior, the smoke bother scale, family smoking behavior, friends' smoking behavior, co-workers/peers/other group smoking behavior, and value relevance were entered. In the next step, the family interaction term, friends' interaction term, and co-workers/peers/other group interaction term were added. The purpose of adding these interaction terms as a separate step in the regression model was to see whether using group identification as a moderating variable added any additional explanation in the

variance of attitudes and intentions, beyond the variance explained simply by the relationship between group smoking behavior and attitudes/intentions.

The results of the regression analysis revealed that none of the three interaction terms were significant (see Table 6). This means that utilizing group identification as a moderating variable between group smoking behavior and attitudes/intentions did not add any additional explanation of the variance in attitudes/intentions. This was true for family identification, friends' identification, and co-workers/peers/other group identification. Hypothesis 3 was not supported.

Table 6

Regression Model for Hypothesis 3

Variable	*B*	*SE B*	β
Self Interest			
Personal smoking behavior	-.16	.04	-.22**
Smoke bother scale	.50	.06	.45**
Group Smoking Behavior			
Family smoking behavior	.04	.22	.04
Friends' smoking behavior	-.05	.11	-.04
Co-workers/peers/other smoking behavior	-.16	.09	-.13
Value relevance	.20	.04	.21**
Group Smoking x Group Identification			
Family interaction term	-.03	.04	-.16
Friends' interaction term	-.02	.02	-.06
Co-workers/peers/other interaction term	.03	.02	.08

Note. **$p < .01$, *$p < .05$. ΔR^2 from Hypothesis 1 (Table 6) was .004.

CHAPTER 4

Discussion

Although this study did not find support for the relationship between attitudes and intended behaviors (Azjen, 1991) when applied to the topic of public smoking bans, the study did support the application of the modified Boninger et al. (1995) model of attitude strength to this issue. The present study supported this attitude model, which purported that self-interest, social identification, and value relevance would predict an individual's attitude about a particular issue. Although Boninger et al. (1995) measured the outcome of attitude strength, the adapted model was also supported in the current study when the outcome variable was attitudes of support for smoke-free policies.

While social identification was a significant predictor of attitudes and intentions about smoking bans, this component was limited in the present study due to the fact that the only aspect of social identification found to effect attitudes and intentions was family smoking behavior. The presence of a relationship between family smoking behavior and attitudes about smoke-free policies is consistent with prior research in this area (Dixon et al., 1991); however, the present study was not able to support prior research evidencing a relationship between friends' smoking behavior and attitudes toward smoke-free policies (Dixon et al., 1991). In addition, the present study was not able to find support for an interaction effect between group smoking behavior and identification with that particular group. A post-hoc power analysis revealed that the current study had approximately a 52% chance of detecting an interaction effect. A study that included a sample size which was closer to 500 would have had a greater power to detect an interaction effect

(MacKinnon et al., 2002). On the dimension of social identification, the present study was unable to expand upon previous research.

The present study lent further support to the relationship between self-interest and policy attitudes about tobacco control in general (Brooks & Mucci, 2001; Dixon et al., 1991; Green & Gerken, 1989; Taylor, Ross, Goldsmith, Zanna, & Lock, 1998). Building upon prior research on attitudes about smoke-free policies, which has focused largely on self-interest, the present study was also able to find support for a relationship between political beliefs and attitudes. Prior research has had little success in finding support for this relationship, which may have been related to previous less comprehensive attempts to measure political beliefs (Dixon et al., 1991). Specifically, the present study altered the measurement of political beliefs from party identification to a more sensitive measure that assessed an individual's political beliefs on a scale ranging from individualism to egalitarianism. It may have been this modification which allowed political values to be a significant predictor of supportive attitudes and intentions about public smoking bans.

In addition, the present study found that the participants in this study were generally supportive in their attitudes about and intentions toward public smoking bans. Although their attitudes were not in the "strongly agree" domain with regards to these policies, they were in the agreement domain. This finding is interesting due to the fact that the county in which this study was conducted does not have public smoking bans in all public places, yet residents appear to be supportive of these policies. This information may be useful for policymakers in this area. Not only does the county where this research was conducted lack public smoking bans, but the state also lacks public smoking bans. The state has legislation that is preemptive, meaning that individual local

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governing bodies are prohibited from creating smoking bans that are more stringent than those at the state level. This may be an issue that researchers and state policymakers may want to investigate further. In other words, does this trend of supportive attitudes and intentions about public smoking bans replicate in other counties in the state? If so, then state policymakers may want to take a closer look at the preemptive legislation, and consider giving individual community governments the option to create their own smoke-free public policies if they so.

One important finding was the lack of differentiation found between the constructs of attitudes and intended behaviors in the present study. Instead of supporting Azjen's Theory of Planned Behavior (1991), which states that attitudes do predict intended behaviors, the way these constructs were measured in the present study found that they were too similar to be classified as different variables. Without examining the factor loadings of the individual items and the correlation between these two variables after correcting for unreliability (.98), a regression between these terms would have found that this relationship was significant. This would have been misleading since the measurement of the variables in the current data set did not show that these scales were measuring different constructs.

A possible explanation for the similarity of these constructs in the present study, beyond measurement issues, is that participants were not making decisions about an issue that they had the ability to vote on in the immediate future. A high correlation (r = .91) between attitudes and intentions about voting choice was found in another study (Watters, 1989). In a review of 16 studies done by Azjen (1991), correlations between attitudes and intentions ranged from .26 to .92, so it is interesting that one of the highest

correlations between these variables in this review was another study on voting choice. The strong relationship between attitudes and intentions may be important for policymakers to note, because this is saying that intentions to act in relation to public smoking bans, including voting behavior, are in line with community attitudes toward this issue. This means that community attitudes toward public smoking bans should be taken seriously, because they are measuring a similar construct as their intentions to act in support or opposition to public smoking bans. Continuing along this trajectory, community attitudes may well be capable of informing policy, and therefore able to aid in reducing the gap between the health risks related to environmental tobacco smoke exposure and policies which attempt to reduce such exposure.

Limitations of the present study

A major limitation of the sample in the present study was that although the interviewers called households at various times of the day and evening, every day of the week and some weekends, a disproportionate amount of the sample was female. This indirect oversampling of females may have lent bias to the results. In addition, the sample was conducted in one county in one state, and some of the findings may have been specific to this region. The study was able to sample a decent amount of individuals in order to generalize to this county, but its ability to generalize beyond this type of sample in this region may be limited.

Also related to generalizability was the reliance on landline household telephone numbers. These were the only types of telephone numbers included in this study, as those are the only types of numbers provided through the random number database. This is a limitation due to the increasing number of individuals who use cellular phones

(Tucker, Lepkowski, & Piekarski, 2002). A particular group, those individuals who do not have landline telephone numbers, was missing from this study. It is possible that some of these individuals may have had cellular phones; however, telephone survey research has not yet expanded to include cellular phones. One major reason for this is that individuals who have cellular phones would then be paying through their telephone minutes to participate in the study. This has some serious ethical concerns and is currently illegal. Changes at the legal level would have to be made before cellular phones could be included.

Further, the close-ended nature of the questionnaire did not allow the respondents to add any additional insight about this topic as a part of the telephone interview. The lack of open-ended questions may have limited the ability of the study to obtain a deeper understanding of how individuals felt about the issue of public smoking bans.

Another limitation in the present study was the brevity of the scales. Residents in this study who were on the random digit dial phone list were contacted at random in order to provide a representative sample that would be generalizable to the county. While this was a benefits of the methodology used in this study, one major limitation was the number of items that could be used to measure the constructs of interest. In order to get individuals to participate, the survey had to be fairly short. These time constraints capped the ability of the present study to obtain a broader picture of the predictors of residents' support/lack of support for public smoking bans.

Specifically, one area of the model that suffered from a lack of items was the social identification construct. The present study was only able to ask a few questions per group of interest about identification with the group and smoking behavior of the

group. The inability of the study to find support for relationships beyond that of family smoking behavior and attitudes/intentions about public smoking bans may have been a function of the limited number of items that were asked about this construct. With regards to the co-workers/peers/other group, the lack of significant findings for this variable may have been due to the fact that too many groups incorporated into this one category may have confounded its effect.

Implications for future research

It is important that future research on attitudes toward public smoking bans attempts to replicate the findings of the current study using other samples. Perhaps through using alternative sampling techniques, future research could study attitudes on this issue with a sample that has a higher number of males, and greater ethnic diversities. The ability to obtain such a sample was limited due to the random-digit dial method. An alternative would be to stratify the sample based on gender or ethnicity, and to conduct the research by in-person interviews. This may provide broader information about community attitudes about public smoking bans.

A major aspect for future research to expand on is within the domain of group smoking behavior and group identification with relation to attitudes and intentions about smoke-free policies. Future research could include significantly more items about both of these domains of social identification. Specifically, with respect to group smoking behavior, items which asked not only about the proportion of the group that smoked, but also asked the participant about the level of smoking behavior of these groups may provide additional information. Including this type of measure may allow for assessment

of whether there are differential effects for group smoking behavior based on how many cigarettes the individuals in these groups smoked.

In the domain of group identification, there is significant room for future research. First, future research may want to include only co-workers in the third group and not combine this group with peers (students) or allow individuals to provide another salient group membership. Co-workers may be different than family and friends because it is not identified as one of an individual's primary groups (Wong-Rieger & Taylor, 1981). Another option would be to eliminate this group altogether, and only focus on the highly salient primary groups of friends and family, especially if there were time constraints as there are with random phone surveys. Beyond the specific groups that should be identified in future studies, alternative ways to measure group identification need to be developed.

While the measurement of this construct was limited due to the small number of items, items which provide greater variability in participant responses should be utilized. This may help to increase the amount of variance in attitudes and intentions explained by the model beyond the 57.8% of variance explained in the present study. For example, the present study asked participants to respond to the statement, "My family reflects who I am." This was a hard statement for most the participants to respond to with an answer of "strongly disagree." Since we do know that groups are important to an individual's social identity (Tajfel, 1981; Wong-Rieger & Taylor, 1981), the possibility of finding an effect for the issue of public smoking bans should not be eliminated at this point. A measure that is more sensitive to changes in the level of importance of family and friends to an individual's social identity may more apt to detect an effect for the interaction of

group identification of family, friends, and co-workers with the smoking behaviors of these groups. This may help to truly understand if and how the strength of an individual's relationship with his/her family, friends, and co-workers, combined with the smoking behaviors of those groups, may impact his/her attitudes about smoking bans.

An additional measurement limitation in the present study was the manner in which participants were asked about the degree to which they have been bothered by smoke. The measure used asked participants how often they have been bothered by smoke, but did not ask participants how often they were bothered by smoke *while in its presence*. This may have resulted in participants answering that they were less bothered by smoke than they actually were, because participants who are most bothered by smoke may take steps to avoid being around it.

Another opportunity for expansion upon the present study would be to include a qualitative component. An effective way to obtain this type of data may be through conducting in-person interviews. Qualitative methodology has the capacity to provide a more comprehensive understanding about a particular topic area (Patton, 1990). A future study which would utilize qualitative methodology through more extensive interviews may provide a more complete understanding of what individuals' experiences have been in dealing with smoking in public places, and how their experiences have/have not affected their lives and attitudes/intentions about this issue. This type of interview may also allow participants the opportunity to think more deeply and comprehensively about their attitudes and intentions related to this topic. A qualitative study of this nature should consider following a standardized open-ended format. The purpose of using this type of format would be to be able to provide policymakers with a list of consistent

questions that were asked, so that they would be less apt to feel that the interviews were biased (Patton, 1990).

Also, it is important to continue trying to investigate how individuals in states that do not have complete smoking bans feel about these bans because most states do not have these policies in place. Understanding whether there is a discrepancy between individuals' feelings about public smoking bans and the lack of existing policies in that state may be useful information for policymakers. Continuing to evaluate community attitudes in states that are located in various regions of the country may help to further reduce the disparity between health effects related to environmental tobacco exposure and the lack of smoke-free public policies that have been implemented.

Finally, there is a wealth of opportunities in states such as California and Massachusetts, where public smoking bans are in place, or are being developed, to address one of the limitations of the current study—the inability to measure actual behaviors. In states where these policies have been implemented, the possibility exists for research to ask individuals how their behaviors have or have not changed as a result of the implementation of public smoking bans. This type of study may be able to determine whether or not attitudes toward public smoking bans can predict actual behaviors in support or opposition to these bans.

An ideal future study that could address this issue would be a study that could take place in a location where a complete public smoking ban was about to be implemented. The study could collect longitudinal data through interviewing participants at multiple time points before the ban were implemented. This way, a true assessment of individuals' attitudes and intentions about public smoking bans could be collected before

the ban were implemented. After the ban was implemented, repeated follow-up interviews with these same individuals could be collected over time. The follow-up interviews would have the capacity to evaluate actual behaviors that these individuals had done in support of or in opposition to the public smoking ban. A study of this nature would then be able to truly answer whether or not attitudes toward these bans could predict actual behaviors for or against them. This would be important information that would have strong potential to provide evidence to policymakers which could assist in reducing the gap between the health effects related to environmental tobacco smoke and the lack of current policies in place to protect individuals from such health hazards.

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APPENDICES

APPENDIX A

Explanation of Confidentiality and Purpose of the Study

"Hi, I know you're probably really busy, but I would appreciate your participation in a short survey asking for your opinions on policies that would ban smoking in public places. I am part of a team at Michigan State University that is trying to find out people's opinions in your community about this controversial topic.

Before I proceed, I have to ask whether you are at least 18 years old? (If yes, proceed. If no, "If you don't mind, may I speak with someone in your house who is 18 or older?"). (Once you get an individual who is 18 or older, repeat the opening paragraph and then continue).

I would like to ask you a couple of questions feelings about the issue of smoke-free public policies. This should only take about 10 minutes, and the results may be used to provide information for key leaders in your community. Just to be clear, all of the information you provide will be kept confidential and your privacy will be protected by the maximum extent allowable by law.

You don't have to answer a particular question, and you can stop the interview at any time. Would you be willing to participate?"

(If no, stop here and say, "Okay, well I appreciate you taking the time to speak with me today.")

(If yes, say, "Great. I need to let you know that there are no perceived risks to you for participating in this study. In fact, this study may provide you with an opportunity to think more deeply about smoking in public places.")

"I am required to tell you that contact information can be provided for you if you have any questions or concerns about this study in particular or your rights as a human subject. Would you like this information?"

(If participant answers yes to "questions or concerns about this study in particular, say, "Feel free to contact Dr. William Davidson II who is the principal investigator of this project. He is a Distinguished Professor at Michigan State University and can be reached at 517-353-5015. You may also contact Marisa Sturza, who is the Graduate Student researcher for this project at 517-353-9965).

(If participant answers yes to "questions or concerns about his/her rights as human subjects, say, "Feel free to contact Dr. Ashmir Kumar who is the Chair of UCRIHS (University Committee on Research Involving Human Subjects) at Michigan State University and can be reached at 517-355-2180.")

"Do you voluntarily give permission to participate in this short survey about smoking in public places?"

(If yes, please proceed to the questionnaire)

(If no, say, "Thank you for taking the time to speak with me today.")

APPENDIX B

Demographic Information

First, I would like to ask you some brief information about yourself.

1. What is your gender?
   a. Male
   b. Female

2. Are you a registered voter?_____

3. Did you vote in the 2000 presidential election?____

4. Do you plan to vote in the November election?_____

4. How old are you? _____

5. How many children under the age of 16, if any, do you have? _____

6. What is the highest level of education that you have completed at this point in your life?
   a. Grade 8
   b. High school diploma/GED
   c. Some college
   d. 2 year college degree
   e. 4 year college degree
   f. Graduate degree
   g. Other, specify_____

7. What racial group do you identify with?
   a. African American
   b. Caucasian American
   c. Hispanic American
   d. Native American
   e. Asian American
   f. Bi-racial, specify _____
   g. Multi-racial, specify_____
   h. Other, specify_____

Study Questionnaire

The first set of questions I am going to ask you focus on your personal smoking behaviors.

Please indicate which of the following 6 statements best describes your personal smoking behavior.

1. Never smoked cigarettes regularly.
2. Was a smoker for at least a 3-month period in my life, but have smoked 0 cigarettes in the past week.
3. Occasional smoker (1-5 cigarettes per week) for the last 3 months
4. Light smoker (fewer than 10 cigarettes per day) for the last 3 months.
5. Moderate smoker (between 10 and 19 cigarettes per day) for the last 3 months.
6. Heavy smoker (20 or more cigarettes per day) for the last 3 months.

Next, I would like you to please answer the following questions about how you have been affected by cigarette smoke.

Never 0	Rarely 1	Sometimes 2	Often 3	Always 4

1. How often has being around cigarette smoke caused you to have a headache?	0	1	2	3	4
2. How often has being around cigarette smoke caused you to have breathing problems?	0	1	2	3	4
3. How often has being around cigarette smoke caused you to have eye irritation?	0	1	2	3	4
4. How often have you felt bothered in general by being around cigarette smoke?	0	1	2	3	4

Are you currently either employed or a student?_____
If not, what would be another group that you spend a significant amount of time with? _____

(FOR INTERVIEWER, IF THE PARTICIPANT IS NOT EMPLOYED, REPLACE THE GROUP LISTED ABOVE WITH CO-WORKERS/PEERS BELOW)

Next, please answer the following 3 questions about your social activities.

10. On average, how many hours do you spend per week with your family members?	
11. On average, how many hours do you spend per week with your friends?	
12. On average, how many hours do you spend per week with your co-workers/peers **(OR OTHER GROUP LISTED ABOVE)?**	

For the following questions, please describe the smoking behaviors of your family, friends, and co-workers.

None 0	Less than half 1	About half 2	More than half 3	All 4

1. What portion of your immediate family members currently smoke? (By immediate family I mean parents, siblings, spouse, children)	0	1	2	3	4
2. What portion of your friends currently smoke?	0	1	2	3	4
3. What portion of your co-workers/peers currently smoke?	0	1	2	3	4

Now, I am going to ask you about your feelings and opinions about different issues. For the following statements, please choose any response "1, 2, 3, 4, 5, or 6," understanding that a "1" means "strongly disagree" and a "6" means "strongly agree."

Strongly Disagree 1	2	3	4	5	Strongly Agree 6

	1	2	3	4	5	6
1. My co-workers/peers (_____) reflect who I am.	1	2	3	4	5	6
2. I have a strong sense of belonging to my family.	1	2	3	4	5	6
3. My friends reflect who I am.	1	2	3	4	5	6
4. I have a strong sense of belonging to my friends.	1	2	3	4	5	6
5. My family reflects who I am.	1	2	3	4	5	6
6. I have a strong sense of belonging to my co-workers/peers (_____).	1	2	3	4	5	6
7. Smoking should be *allowed* in designated areas of restaurants. (R)	1	2	3	4	5	6
8. Government should not regulate individual behaviors. (R)	1	2	3	4	5	6
9. I would vote for a political candidate who *favored* public smoking bans.	1	2	3	4	5	6
10. A non-smoker should *not* have to be in contact with tobacco smoke.	1	2	3	4	5	6
11. If restaurants banned smoking, I would eat out *less*. (R)	1	2	3	4	5	6
12. The government should create more policies to protect public health.	1	2	3	4	5	6
13. I would write a letter to my elected representative *opposing* smoking bans. (R)	1	2	3	4	5	6
14. Incomes should be more equal, because people contribute equally to society.	1	2	3	4	5	6
15. Smoking should be *banned* in all indoor public places.	1	2	3	4	5	6
16. Smoking should be outlawed in bars.	1	2	3	4	5	6
17. The government should develop programs to improve quality of life for all of its citizens.	1	2	3	4	5	6
18. A person *should* have the right to smoke in outdoor public places. (R)	1	2	3	4	5	6
19. If restaurants had complete smoking bans, I would eat out *more*.	1	2	3	4	5	6
20. Those who are well off in this country should be obligated to help those who are less fortunate.	1	2	3	4	5	6
21. I would vote to have current smoking restrictions reduced. (R)	1	2	3	4	5	6
22. People should not expect to breathe smoke-free air (R)	1	2	3	4	5	6
23. We focus too much effort on having equal rights in this country. (R)	1	2	3	4	5	6

24. Employers *should* be required to provide a smoke-free work environment for their employees.	1	2	3	4	5	6
25. I would enjoy eating out more if there was no smoking.	1	2	3	4	5	6

Finally,

What is your overall approximate yearly household income?
> a. less than $10,000
> b. $10,001-$30,000
> c. $30,001-$50,000
> d. $50,001-$70,000
> e. above $70,000

Thank you for participating in the study. All of your answers will be kept confidential.

We will use your responses to develop a better understanding of the thoughts and feelings

of members of your community about public smoking bans.

APPENDIX D

Self-interest Items, Personal Smoking Behavior

Please indicate which of the following 6 statements best describes your personal smoking behavior.

1. Never smoked cigarettes regularly.
2. Was a smoker for at least a 3-month period in my life, but have smoked 0 cigarettes in the past week.
3. Occasional smoker (1-5 cigarettes per week) for the last 3 months
4. Light smoker (fewer than 10 cigarettes per day) for the last 3 months.
5. Moderate smoker (between 10 and 19 cigarettes per day) for the last 3 months.
6. Heavy smoker (20 or more cigarettes per day) for the last 3 months.

APPENDIX E

Self Interest Items, Smoke Bother Scale

1. How often has being around cigarette smoke caused you to have a headache?
2. How often has being around cigarette smoke caused you to have breathing problems?
3. How often has being around cigarette smoke caused you to have eye irritation?
4. How often have you felt bothered in general by being around cigarette smoke?

APPENDIX F

Final Social Identification Items, Group Identification [1]

Family
1. I have a strong sense of belonging to my family.
2. My family reflects who I am.
3. On average, how many hours do you spend per week with your family members?

Friends
1. I have a strong sense of belonging to my friends.
2. My friends reflect who I am.
3. On average, how many hours do you spend per week with your friends?

Co-workers/peers/other group
1. I have a strong sense of belonging to my co-workers/peers (_____).
2. My co-workers/peers (_____) reflect who I am.
3. On average, how many hours do you spend per week with your co-workers/peers or other group?

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[1] The Final Group Identification Items are the items measuring this construct after the poor fitting items were thrown out.

Original Social Identification Items, Group Identification [2]

Family
1. I have a strong sense of belonging to my family.
2. My family reflects who I am.
3. On average, how many hours do you spend per week with your family members?

Friends
1. I have a strong sense of belonging to my friends.
2. My friends reflect who I am.
3. On average, how many hours do you spend per week with your friends?

Co-workers/peers/other group
1. I have a strong sense of belonging to my co-workers/peers (_____).
2. My co-workers/peers (_____) reflect who I am.
3. On average, how many hours do you spend per week with your co-workers/peers or other group?

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[2] The Original Group Identification items were those items used in the study, before analyses were done on the items. Items in bold represent items that were thrown out after analyses were done.

APPENDIX H

Social Identification Items, Group Smoking Behaviors

1. What portion of your immediate family members currently smoke?
   (By immediate family I mean parents, siblings, spouse, children)
2. What portion of your friends currently smoke?
3. What portion of your co-workers/peers currently smoke?

APPENDIX I

Final Political Values Egalitarian Scale[3]

1. The government should create more policies to protect public health.
2. Incomes should be more equal, because people contribute equally to society.
3. The government should develop programs to improve quality of life for all of its citizens.
4. Those who are well off in this country should be obligated to help those who are less fortunate.

---

[3] The Final Political Values Egalitarian Scale is the scale measuring political values after poor fitting items were thrown out.

APPENDIX J

Original Political Values Scale[4]

1. The government should create more policies to protect public health.
2. Incomes should be more equal, because people contribute equally to society.
3. The government should develop programs to improve quality of life for all of its citizens.
4. Those who are well off in this country should be obligated to help those who are less fortunate.
5. **Government should not regulate individual behaviors. (R)**
6. **We focus too much effort on having equal rights in this country. (R)**

---

[4] The Original Political Values Scale is the scale that was used for the study, before items were removed. The bolded items in the original scale are the items that were thrown out after analyses on the scale were performed.

APPENDIX K

Final Attitudes and Intentions about Smoking Bans Scale[5]

1. Smoking should be *allowed* in designated areas of restaurants. (R)
2. I would vote for a political candidate who *favored* public smoking bans.
3. A non-smoker should *not* have to be in contact with tobacco smoke.
4. If restaurants banned smoking, I would eat out *less*. (R)
5. I would write a letter to my elected representative *opposing* smoking bans. (R)
6. Smoking should be *banned* in all indoor public places.
7. Smoking should be outlawed in bars.
8. A person *should* have the right to smoke in outdoor public places. (R)
9. If restaurants had complete smoking bans, I would eat out *more*.
10. I would vote to have current smoking restrictions reduced. (R)
11. People should not expect to breathe smoke-free air. (R)
12. Employers *should* be required to provide a smoke-free work environment for their employees.
13. I would enjoy eating out more if there was no smoking.

---

[5] The Final Attitudes and Intentions about Smoking Bans Scale is the scale that was created by joining together the Original Attitude Scale and Original Intended Behaviors Scale. This unification of these scales was done based on analyses of the data.

APPENDIX L

Original Attitudes Scale[6]

1. Smoking should be *allowed* in designated areas of restaurants. (R)
2. A non-smoker should *not* have to be in contact with tobacco smoke.
3. Smoking should be *banned* in all indoor public places.
4. Smoking should be outlawed in bars.
5. A person *should* have the right to smoke in outdoor public places. (R)
6. People should not expect to breathe smoke-free air. (R)
7. Employers *should* be required to provide a smoke-free work environment for their employees.

---

[6] The Original Attitudes Scale is the scale that was used to measured attitudes, before this scale was combined with the intended behaviors items.

APPENDIX M

Original Intended Behaviors Scale[7]

1. I would vote for a political candidate who *favored* public smoking bans.
2. If restaurants banned smoking, I would eat out *less*. (R)
3. I would write a letter to my elected representative *opposing* smoking bans. (R)
4. If restaurants had complete smoking bans, I would eat out *more*.
5. I would vote to have current smoking restrictions reduced. (R)
6. I would enjoy eating out more if there was no smoking.

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[7] The Original Intended Behaviors Scale was a theoretically separate scale before it was combined with the attitudes scale.

APPENDIX N

Training protocol for interviewers

All five of the undergraduate interviewers underwent a training process conducted by the researcher. This training process was completed before interviewers completed any actual interviews with study participants.

Step One—Training Session 1
The first step in the training process was a group orientation session which was be mandatory for all interviewers. During the orientation session, undergraduate interviewers became acquainted with the other members of the research team (both the other undergraduate interviewers and the researcher). The orientation consisted of:
1. The researcher provided a detailed explanation of the research project.
2. The researcher discussed the importance of following the interview protocol, explaining that deviation from this protocol would jeopardize the results of the study. The researcher informed the interviewers that if they had suggestions to alter the process, they could write them in the logbook, or email the researcher. This way they had the opportunity to provide feedback.
3. The researcher also outlined the requirements of participating in the research project. Interviewers signed up to work either 6 or 8 hours per week, based on the amount of credit that they received for their work on the project.
4. Together, the researcher and the interviewers established a weekly meeting time for the project, which began after the training process was completed. Weekly meetings were scheduled to range from 30 minutes to one hour.

Step Two—Training Session 2
The next step in the training process was for the interviewers to familiarize themselves with each of the sections of the interview. This step consisted of understanding each of the items, as well as practicing the interview.
1. The researcher explained the purpose of each individual section in the interview: confidentiality, smoking behavior, degree bothered by smoke, relationships with family, friends, & co-workers, smoking behaviors of those groups, political values, attitudes, behaviors, demographics, and finally, the interview closing.
2. The researcher went over each item individually, both explaining and answering any questions that arose from the undergraduate interviewers.
3. The researcher then instructed the interviewers on how to mark the respondent answers onto the written interview form.
4. Upon completion of this process, interviewers were paired off to practice the interview on one another. Interviewers completed a written interview form. Then, the interviewers gave one another feedback on the interview. The researcher provided additional feedback to the interviewers that she observed.
5. Interviewers were instructed to practice the interview with two individuals that they knew on their own time. These practice interviews were conducted over the phone. The interviewers were instructed to ask these respondents for

feedback, and bring written feedback to the next meeting, along with the completed interview forms.

Step Three—Training Session 3
Step three involved going over the results of the two interviews that each of the individual interviewers completed and learning project data entry.

1. The researcher explained the SPSS database to the participants, as well as showed them how to enter data into SPSS.
2. The interviewers then each entered the information from the two questionnaires that they had completed into the SPSS database.
3. Then, the interviewers exchanged their written questionnaires and checked one another's entries for errors.
4. Finally, they provided any necessary feedback to one another about where errors occurred. The researcher stressed the importance of accuracy in entering data.
5. The interviewers were instructed to secure two individuals to participate in a practice session for Training Session 4.

Step Four—Training Session 4
Step four involved the interviewers individually calling a respondent selected by the researcher and the other undergraduate interviewers. All of the interviewers called a different respondent.

1. The interviewers each took turns calling a respondent who had been selected by another member of the research team as the other members of the research team observed. This was the first experience that the interviewers had calling someone they did not know. The interviewers phoned the participant and treated him/her as if he/she were an actual participant in the study. The participant's responses were recorded on the written questionnaire.
2. At the end of the interview, the interviewer asked the participant for feedback and also recorded that on the questionnaire. After the interviewer hung up the phone, the researcher and other members of the research team provided feedback to the interviewer on her interview procedure.
3. The interviewers each took turns conducting interviews and the same interview and feedback process was repeated for each interviewer.
4. The research team went over issues that came up during the interviews at the end of the session.
5. The interviewers were issued keys to the project office. The researcher showed the respondents where the interview forms are located in the office, and how to read and mark off the phone numbers on the list. The researcher also showed them where the logbook was located, and how to make entries into it. Interviewers set up a weekly schedule, and the researcher instructed them on where the database was located on the computer.

Item-total Statistics for Value Relevance Scale

Item	Corrected item-total correlation
1. The government should create more policies to protect public health.	.55
2. Incomes should be more equal, because people contribute equally to society.	.26
3. The government should develop programs to improve quality of life for all of its citizens.	.56
4. Those who are well off in this country should be obligated to help those who are less fortunate.	.37
5. Government should not regulate individual behaviors. (R)	.14
6. We focus too much effort on having equal rights in this country. (R)	.10

Alpha = .58

Item-total Statistics for Attitudes Scale

Item	Corrected item-total correlation
1. Smoking should be *allowed* in designated areas of restaurants. (R)	.62
2. A non-smoker should *not* have to be in contact with tobacco smoke.	.36
3. Smoking should be *banned* in all indoor public places.	.67
4. Smoking should be outlawed in bars.	.60
5. A person *should* have the right to smoke in outdoor public places. (R)	.49
6. People should not expect to breathe smoke-free air. (R)	.34
7. Employers *should* be required to provide a smoke-free work environment for their employees.	.51

Alpha = .79

APPENDIX Q

Item-total Statistics for Intended Behaviors Scale

Item	Corrected item-total correlation
1. I would vote for a political candidate who *favored* public smoking bans.	.61
2. If restaurants banned smoking, I would eat out *less*. (R)	.60
3. I would write a letter to my elected representative *opposing* smoking bans. (R)	.44
4. If restaurants had complete smoking bans, I would eat out *more*.	.59
5. I would vote to have current smoking restrictions reduced. (R)	.60
6. I would enjoy eating out more if there was no smoking.	.72

Alpha = .83

APPENDIX R

Item-total Statistics for Attitudes and Intentions About Smoking Bans

Item	Corrected item-total correlation
1. Smoking should be *allowed* in designated areas of restaurants. (R)	.67
2. I would vote for a political candidate who *favored* public smoking bans.	.62
3. A non-smoker should *not* have to be in contact with tobacco smoke.	.41
4. If restaurants banned smoking, I would eat out *less*. (R)	.57
5. I would write a letter to my elected representative *opposing* smoking bans. (R)	.46
6. Smoking should be *banned* in all indoor public places.	.71
7. Smoking should be outlawed in bars.	.59
8. A person *should* have the right to smoke in outdoor public places. (R)	.54
9. If restaurants had complete smoking bans, I would eat out *more*.	.66
10. I would vote to have current smoking restrictions reduced. (R)	.64
11. People should not expect to breathe smoke-free air. (R)	.38
12. Employers *should* be required to provide a smoke-free work environment for their employees.	.53
13. I would enjoy eating out more if there was no smoking.	.77

Alpha = .89