



Smokefree Communities in Wyoming: Evanston Survey

Report to the Wyoming Department of Health
Substance Abuse Division

By

Marcus McLean, Graduate Assistant
Laura Feldman, Ed.S., Principal Investigator
Shannon Powell, Graduate Assistant

With the assistance of

Shanna Gillette, Ph.D., Assistant Research Scientist
Elissa Hansen, Graduate Assistant

Wyoming Survey & Analysis Center
University of Wyoming
710 Garfield • Suite 320
Laramie, WY 82072
(307) 742-2223 • wysac@uwyo.edu

WYSAC Technical Report No. CHES-605

April 2006

Table of Contents

1. Executive Summary.....	3
2. Introduction	4
3. Organization of Report.....	4
4. Methods	4
5. Demographics	5
6. Key Findings	6
6.1. Perceived health benefits from a smokefree policy	6
6.2. Smokefree laws as a matter of health versus rights.....	7
6.3. Preferences for non-smoking restaurants, bars, and private clubs	8
6.4. Anticipated economic effects.....	9
6.5. Overall feelings toward a smokefree policy	11
7. Conclusions	13
8. Appendices	14
8.1 Appendix A: Frequencies.....	14
8.2 Appendix B: Open-ended questions.....	27
8.3 Appendix C: Explanation of odds.....	32
8.4 Appendix D: Logistic regression results.....	34

List of Figures and Tables

Figure 1. Age of Respondents	5
Figure 2. Education of respondents	6
Figure 3. Responses to “Breathing Others’ Cigarette Smoke is Harmful”	6
Figure 4. Feelings about a Smokefree Law’s Effect on Evanston Public Health	7
Figure 5. Health vs. Rights by Smoking Status	7
Figure 6. Health vs. Rights by Political Ideology	8
Figure 7. Smoking Preference for Restaurants by Smoking Status	9
Figure 8. Beliefs about the Expected Effect of a Smokefree Policy on Restaurants by Smoking Status.....	10
Figure 9. Beliefs about the Expected Effect of a Smokefree Policy on Bars by Smoking Status	10
Figure 10. Overall Feelings toward a Smokefree Policy	11

1. Executive Summary

In November 2005, the Wyoming Survey and Analysis Center (WYSAC) conducted a telephone survey of Evanston residents regarding their attitudes toward smokefree environments and a smokefree ordinance. The conclusions presented are valid for the residents of Evanston, Wyoming, but are not valid for all of Wyoming. The total sample size was 479 respondents.

The majority of adults surveyed in Evanston

- believed that breathing second-hand smoke is harmful (88%).
- believed that a smokefree ordinance would improve Evanston public health (64%).
- preferred completely smokefree restaurants (54%).

Although their reasons varied, 44% of all respondents said that they would be happy, 32% responded that they would be neutral, and only 24% said that they would be unhappy if Evanston passed a smokefree ordinance. Three factors influenced respondents' feelings toward the passage of a smokefree ordinance.

The first factor was an individual's smoking status (27% were smokers). A person's opinion on this issue was most influential when determining how he or she felt about a smokefree ordinance.

- Smokers
 - were strongly opposed to a smokefree ordinance.
 - strongly believed that support for such an ordinance to be a matter of rights, not a matter of health.
 - expected their own attendance at bars and restaurants to decrease if Evanston passed a smokefree ordinance.
 - thought that a smokefree ordinance would have little or no effect on Evanston public health.
- Non-smokers were much more likely to be happy with a smokefree ordinance.

The next most influential factor concerned the debate between health and rights.

- Respondents who saw a smokefree ordinance as a health issue strongly supported implementing an ordinance.
- Those who saw a smokefree ordinance as a rights issue broke into two groups:
 - Those who saw the right to smokefree air as more important than the owner's right to decide policy tended to favor a smokefree ordinance.
 - Those who believed that business owners should decide smoking policies tended to be unhappy with a smokefree ordinance.

Finally, the last factor that affected feelings toward a smokefree ordinance related to the anticipated economic impact from a smokefree ordinance.

- Most people believed that a smokefree ordinance would negatively affect restaurant, bar, and private club revenues; smokers felt that the impact would be more negative.
- The more negative an outcome the respondent expected, the more likely he or she was to be unhappy about smokefree legislation.
- Although most people anticipated that revenues would decrease for bars, restaurants, and private clubs, the majority of these same individuals also anticipated that *they* would *not* change how often they would go to restaurants and bars.

2. Introduction

In November 2005, the Wyoming Survey and Analysis Center (WYSAC), contracted by the Wyoming Department of Health, Substance Abuse Division (SAD), conducted a survey of Evanston residents regarding their attitudes toward smokefree environments. WYSAC adapted the Evanston survey from the Laramie Smoking Ordinance Survey. This report presents results and conclusions based on data from the adapted survey. The conclusions presented are valid for the residents of Evanston, Wyoming, but are not valid for all of Wyoming.

3. Organization of Report

The remainder of this report is organized around five main sections. Section 4 describes the methods used to administer the survey and to collect data. Section 5 presents a snapshot of the respondents' demographics. Section 6 reports the key findings in five topic areas concerning respondents' feelings toward a smokefree policy:

- 6.1. Perceived health benefits from a smokefree policy
- 6.2. Smokefree legislation as a matter of health versus rights
- 6.3. Preferences for non-smoking restaurants, bars, and private clubs
- 6.4. Anticipated economic effects
- 6.5. Overall feelings toward a smokefree policy

Section 7 discusses overall conclusions suggested by the key findings and profile analysis. Section 8 contains four appendices. Appendix A provides the survey questionnaire and frequency data for each question. Appendix B lists the responses to two open-ended questions in the survey. Appendix C provides information about odds. Appendix D provides information about the statistical results.

4. Methods

WYSAC adapted the Laramie Smokefree Ordinance Survey for administration in Evanston. The original survey, developed in consultation with SAD, assessed the impact of Laramie's smokefree ordinance, which went into effect in April 2005. In the survey adapted for use in Evanston, all but two questions were fixed-response questions (e.g., strongly agree, agree, neutral, disagree, or strongly disagree).

Using Random Digit Dialing (RDD), WYSAC's Survey Research Center (SRC) administered the questionnaire to a representative sample of Evanston households by telephone. Trained WYSAC interviewers called Evanston residents, 18 and older, between November 7 and November 30, 2005. The SRC attempted to contact individuals fifteen times before excluding anyone from the sample. A total of 479 respondents completed the survey. Based on this sample, the statistical margin of error when estimating a specific percentage was approximately 4.6%.

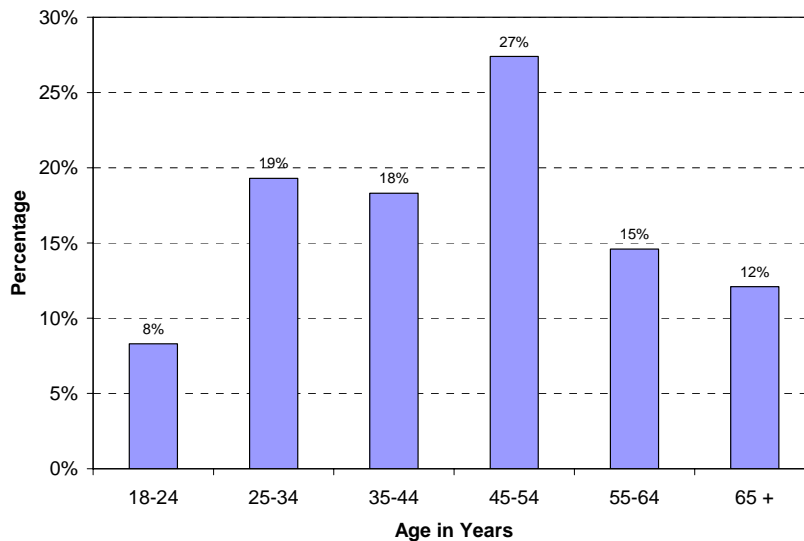
WYSAC then analyzed the data using SPSS, version 13.0. Although researchers collected and analyzed data on 22 demographic variables, we only report those variables that had a statistically significant influence on responses. Appendix A contains frequencies on all survey items. Percentage calculations excluded missing values such as "don't know" or "no response." Thus, the sample size varies across different questions. In addition, for most analyses involving smoking status, we retained the three smoking groups (smokes daily, smokes occasionally, or does not smoke). When the distinction between daily smoking and occasional smoking did not appear meaningful or statistically significant, we combined these two groups.

Statistical analyses included frequencies and cross-tabulations. Researchers used the overall Pearson chi-square test to interpret significance and used proportions tests to follow up and isolate any significant differences. WYSAC used a multinomial logistic regression to assess the factors that influenced people's feelings (i.e. happy, neutral, or unhappy) regarding a smokefree ordinance and the extent of each factor's influence on their feelings. All results presented in the body of this report are statistically significant at the $\alpha = 0.05$ level. With any survey, the chance of spurious results exists; however, setting statistical significance at this level means that we are at least 95% confident that our results and conclusions are accurate.

5. Demographics

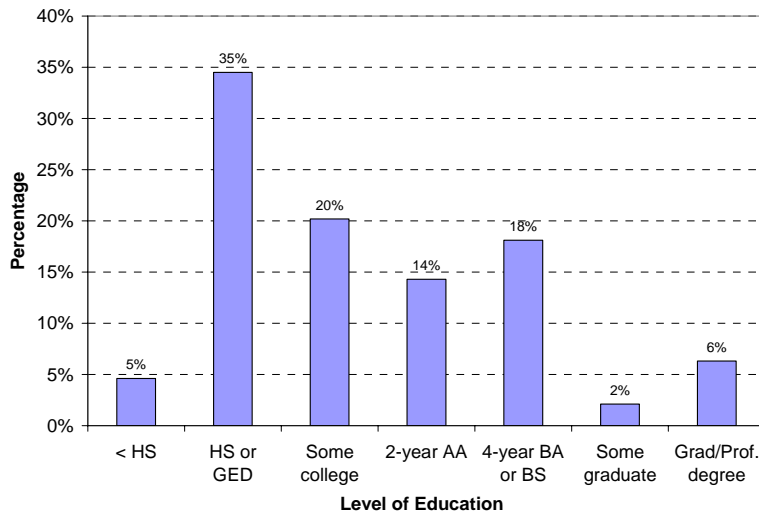
- The average age of respondents was 46 years with the largest group of respondents between 45 and 54 years old. No individuals under the age of 18 completed the survey. Figure 1 displays the age distribution.

Figure 1. Age of Respondents (n = 471)



- 57% of the respondents were female and 43% were male.
- 95% of the Evanston respondents identified themselves as White/non-Hispanic.
- 73% of respondents reported that they do not smoke, 22% reported that they smoke every day, and 5% reported that they smoke some days.
- 44% of the respondents identified themselves as politically conservative, 22% said that they were liberal, 30% felt that they were middle-of-the-road, and 4% identified themselves as libertarian.
- The most commonly reported level of education was a high-school diploma or GED (35%). Figure 2 shows the distribution for level of education.

Figure 2. Education of respondents (n = 476)

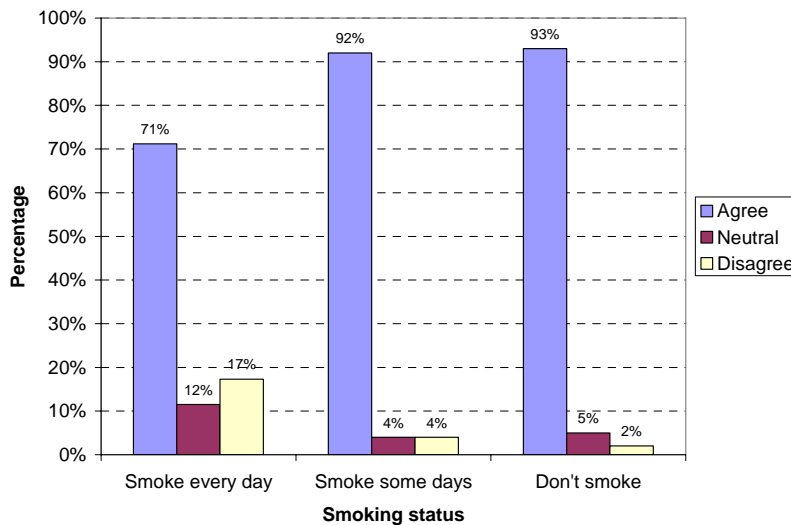


6. Key Findings

6.1. Perceived health benefits from a smokefree policy

The overwhelming majority of those surveyed (88%) responded that breathing secondhand smoke is harmful to one’s health. Figure 3 demonstrates that people’s smoking status significantly influenced their opinions of the dangers of secondhand smoke. Of survey respondents who don’t smoke, 93% felt that breathing secondhand smoke is harmful, while only 71% of survey respondents who smoke every day felt the same. “Strongly agree” and “agree” were combined into “agree,” and “disagree” and “strongly disagree” were combined into “disagree.”

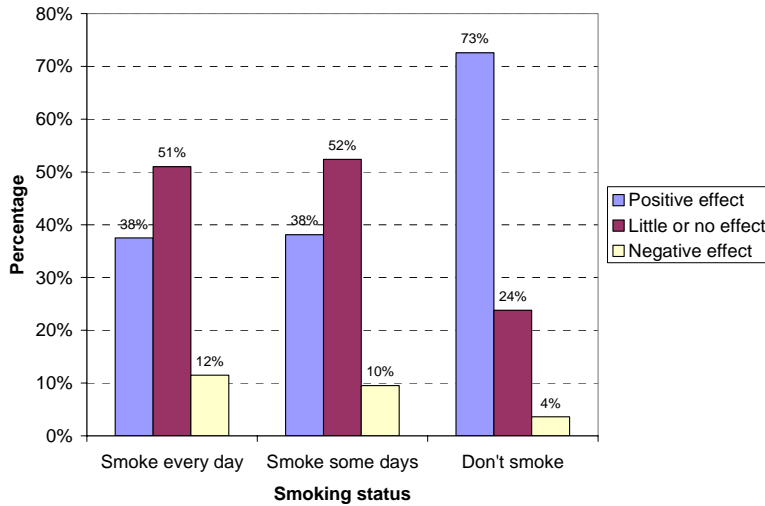
Figure 3. Responses to “Breathing Others’ Cigarette Smoke is Harmful” (n = 472)



About two-thirds (64%) of respondents also felt that a smokefree ordinance would improve Evanston public health. However, respondents who smoke daily and respondents who occasionally smoke were significantly more likely (51% and 52%, respectively) than non-smokers (24%) were to

think that a smokefree ordinance would have little or no effect on health. Non-smokers were much more likely (73%) to believe that such a law would positively affect the health of Evanston residents. Figure 4 shows respondents' feelings on whether a smokefree law would have a positive, negligible, or negative effect on Evanston's public health.

Figure 4. Feelings about a Smokefree Law's Effect on Evanston Public Health (n = 453)

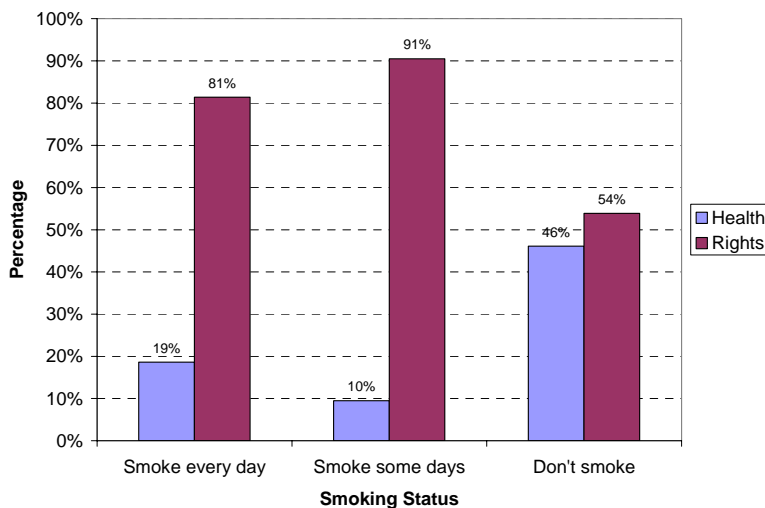


6.2. Smokefree laws as a matter of health versus rights

Although the majority of respondents felt that a smokefree ordinance would improve Evanston public health, when asked if they considered a smokefree ordinance a matter of rights or a matter of health, almost two-thirds (62%) characterized it as primarily a matter of rights. Smoking behavior, political ideology, and sex significantly influenced respondents' opinions.

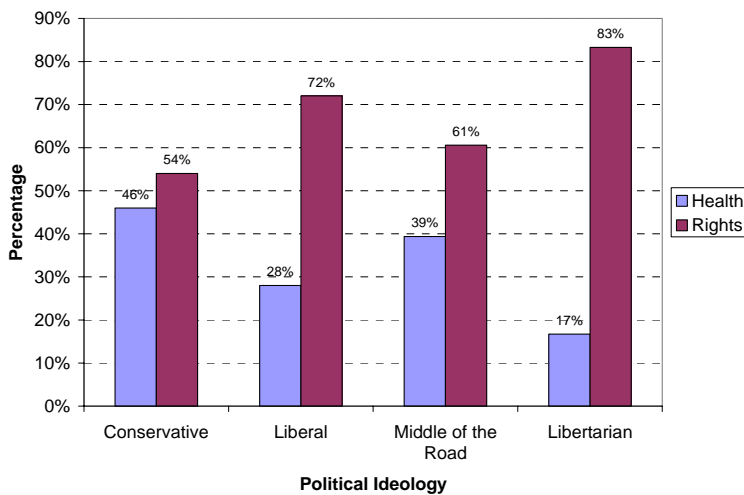
- As Figure 5 shows, daily smokers (81%) and occasional smokers (91%) strongly believed a smokefree ordinance was a question of rights.
- Non-smokers' beliefs were more evenly split; 54% saw an ordinance as a matter of rights.
- Note that the difference between daily and occasional smokers was not significant.

Figure 5. Health vs. Rights by Smoking Status (n = 450)



- Respondents who were political liberals strongly believed that a smokefree ordinance is a matter of rights (72%) while conservatives were more evenly split (54% considered it a matter of rights). Those who identified themselves as middle-of-the-road had beliefs somewhere in-between liberals' and conservatives' (61% considered a smokefree ordinance to be a matter of rights). Not surprisingly, libertarians overwhelmingly believed an ordinance to be a rights issue (see Figure 6).

Figure 6. Health vs. Rights by Political Ideology (n = 366)



- More than two-thirds (70%) of men believed that support for a smokefree ordinance is a matter of rights, while women were more evenly split (56% saw it as a matter of rights).

Although nearly two-thirds of those in the sample believed that support for a smoke-free ordinance came down to a matter of rights, respondents were not as divided as to *whose* rights should take precedence. Overall, 59% reported that it was a business owner's right to decide whether to allow smoking, while 41% of respondents reported that it was an individual's right to breathe smokefree air. Smoking behavior significantly influenced respondents' opinions.

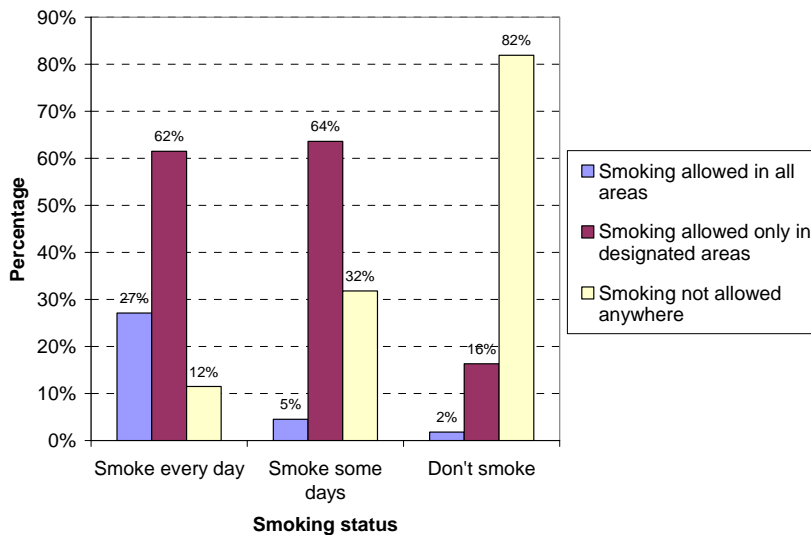
- 83% of daily smokers and 77% of occasional smokers agreed with the statement, "Business owners should have the right to decide the smoking policy for their businesses," whereas only 51% of non-smokers agreed with the statement.

6.3. Preferences for non-smoking restaurants, bars, and private clubs

If given a choice between three identical *restaurants* that only differed in smoking policy, almost two-thirds (64%) of all respondents would choose a restaurant that did not allow smoking anywhere, rather than one that allowed smoking either in designated areas or in all areas. Figure 7 shows that smokers and non-smokers held different views regarding their preferred smoking policy.

- The overwhelming majority (82%) of non-smokers preferred to eat in a restaurant that was entirely smokefree.
- Daily smokers and occasional smokers were not significantly different in their preference for restaurants that allowed smoking in designated areas (62% and 64%, respectively); however, occasional smokers did show moderate support (32%) for restaurants that were entirely smokefree.

Figure 7. Smoking Preference for Restaurants by Smoking Status (n = 449)



- In addition, political conservatives and those who self-identified as middle-of-the-road were more likely to prefer a non-smoking restaurant (75% and 70%, respectively). Liberals split evenly between preferring a non-smoking restaurant (49%) and one with a designated smoking area (45%). Libertarians were strongly in favor of designated smoking areas in restaurants (62%); however, they only comprised a small fraction of the total sample.

Although most respondents (64%) preferred *restaurants* that did not allow smoking, this preference did not transfer over to *bars* or *private clubs*.

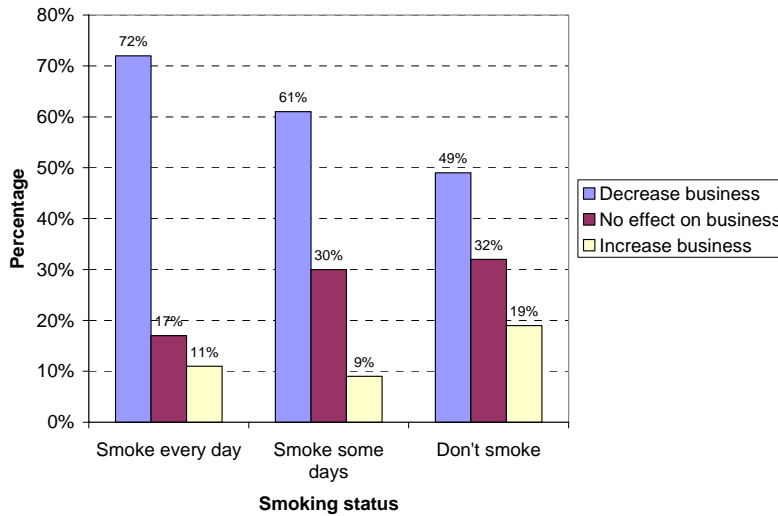
- Only a third (35%) of the respondents felt that *private clubs* should be completely smokefree. As with restaurants, daily smokers and occasional smokers believed in having designated smoking areas in private clubs (74% and 76% respectively); non-smokers were evenly split between wanting a completely smokefree club (47%) and one with designated smoking areas (43%).
- Only a quarter (26%) of respondents felt that *bars* should be completely smokefree. Nearly three-quarters of daily smokers believed (73%) that smoking should be allowed in all areas of bars; half of occasional smokers (50%) preferred designated areas, and the majority (78%) of non-smokers wanted smokefree environments with 35% preferring completely smokefree bars and 43% believing that bars should have designated smoking areas.

6.4. Anticipated economic effects

About half of respondents believed that a smokefree policy in Evanston would decrease revenue for Evanston *restaurants*. Specifically, 15% anticipated that restaurant revenue would be “down over a long time,” and 39% thought that it would be “down for a while.” Smoking behavior significantly affected these opinions (see Figure 8). In Figure 8, the categories of “down for a while” and “down for a long time” were combined into “decrease.” The categories of “up for a while” and “up for a long time” were combined into “increase.”

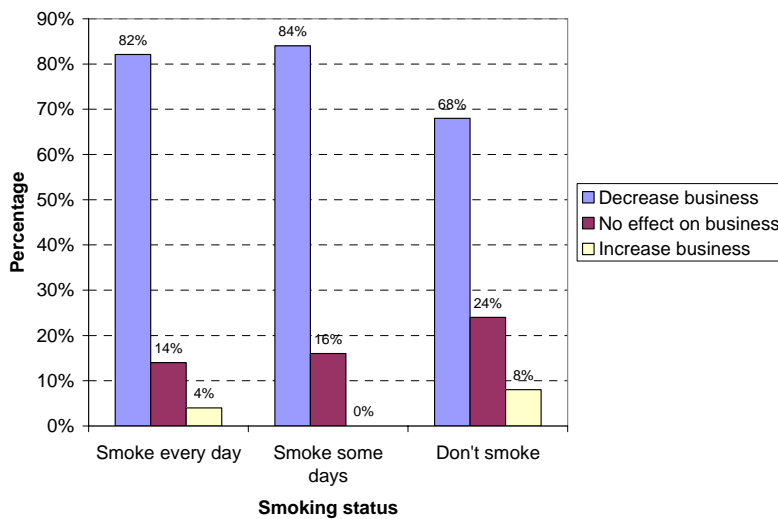
- Daily smokers (71%) were much more likely to believe that a smokefree ordinance would cause business to decrease for restaurants; however, fewer occasional smokers (61%) and only half (49%) of non-smokers shared this belief.

Figure 8. Beliefs about the Expected Effect of a Smokefree Policy on Restaurants by Smoking Status (n = 454)



Respondents had even stronger negative opinions concerning the anticipated economic effect of a smokefree ordinance on bars. While about half of those surveyed felt that restaurant business would go down if a smokefree policy was enacted, nearly three-quarters (72%) of respondents believed that bar business would decrease if a smokefree ordinance passed. Smoking status significantly affected this anticipated effect. As seen in Figure 9, an overwhelming majority of daily smokers (82%) and occasional smokers (84%) felt that a smokefree ordinance would decrease business in bars, while only two-thirds of non-smokers (66%) felt this way.

Figure 9. Beliefs about the Expected Effect of a Smokefree Policy on Bars by Smoking Status (n = 432)

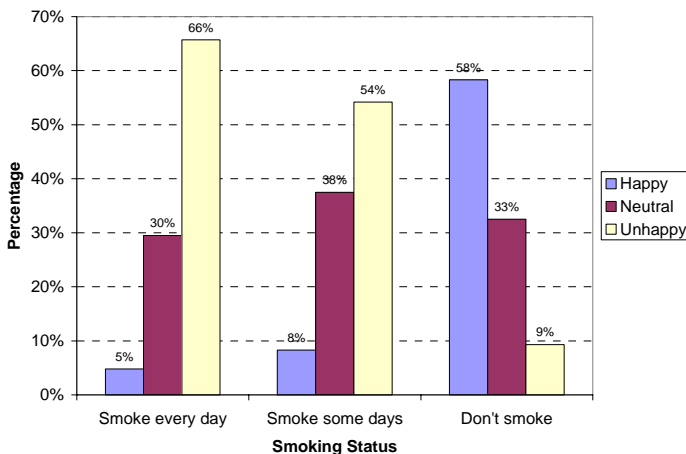


Oddly, even though many people believed that restaurant and bar revenues would decrease with the passage of a smokefree ordinance, the majority of respondents did *not* expect a smokefree ordinance to affect *their* bar attendance (82%) or *their* restaurant attendance (64%).

6.5. Overall feelings toward a smokefree policy

Almost half (44%) of all respondents reported that they would feel “happy,” 32% reported that they would be “neutral,” and almost a quarter (24%) reported that they would feel “unhappy” if Evanston passed a smokefree ordinance. However, smokers and occasional smokers were much more likely to report that they anticipated feeling “unhappy” if an ordinance passed. Non-smokers primarily responded that they would be either “happy” or “neutral” about a smokefree ordinance. Figure 10 compares smokers’ and non-smokers’ reported levels of happiness regarding the passage of a smokefree ordinance.

Figure 10. Overall Feelings toward a Smokefree Policy (n = 474)



WYSAC then evaluated the opinions and attitudes that were correlated with an individual’s feelings (i.e., happy, neutral, unhappy) toward the passage of a smokefree ordinance. The following paragraphs indicate the opinions and attitudes most associated with the three feelings (i.e., happy, neutral, and unhappy). To determine the characteristics of each group, WYSAC compared the individuals in each group with the individuals in the other groups. We first compared respondents who were happy to those who were unhappy. Next, we compared respondents who were neutral to those who were unhappy, and finally, we compared respondents who were unhappy to those who were happy. We used the information gathered from these profiles to describe the opinions and attitudes most influential in determining whether an individual would be happy, neutral, or unhappy with a smokefree ordinance.

The paragraphs below present the opinions from most influential to least influential, as determined by how the odds changed for being in a specific group (i.e., happy, neutral, or unhappy). WYSAC used the following criterion when interpreting changes in the odds.

<u>If the odds of being in a certain group increased by</u>	<u>Interpreted as</u>
1 to 1.999 times	Slightly more likely
2 to 2.999 times	More likely
3 to 9.999 times	Much more likely
10 or more times	Vastly more likely

See Appendix C for further information about odds and probability. See Appendix D for further detailed information about the statistical results.

The following is a profile of the respondents who would be *happy* if a smokefree ordinance passed in Evanston (as compared to those who would be unhappy). People who

- were non-smokers were more vastly more likely to be happy with a smokefree ordinance.
- thought that a smokefree ordinance would have a positive effect on Evanston public health were much more likely to be happy with a smokefree ordinance.
- agreed that breathing smoke from other people's cigarettes is harmful to one's health were much more likely to be happy with a smokefree ordinance.
- believed that bars should be completely smokefree versus having designated smoking areas were much more likely to be happy with a smokefree ordinance.
- agreed that a smokefree ordinance is about the right to smokefree air, not about the business owners' right to decide their own smoking policies were much more likely to be happy with a smokefree ordinance.
- disagreed that a smokefree ordinance takes away too much personal freedom were more likely to be happy with a smokefree ordinance.

The following is a profile of the respondents who would be *neutral* if a smokefree ordinance passed in Evanston (as compared to those who would be unhappy). People who

- were non-smokers were more likely to be neutral with a smokefree ordinance.
- thought that a smokefree ordinance would have a positive effect on Evanston public health were more likely to be neutral with a smokefree ordinance.
- agreed that breathing smoke from other people's cigarettes is harmful to one's health were slightly more likely to be neutral with a smokefree ordinance.
- believed that bars should be completely smokefree versus having designated smoking areas were slightly more likely to be neutral with a smokefree ordinance.
- agreed that a smokefree ordinance is about the right to smokefree air, not about the business owners' right to decide their own smoking policies were slightly more likely to be neutral with a smokefree ordinance.
- disagreed that a smokefree ordinance takes away too much personal freedom were slightly more likely to be neutral with a smokefree ordinance.

The following is a profile of the respondents who would be *unhappy* if a smokefree ordinance passed in Evanston (as compared to those who would be happy). People who

- were daily smokers were vastly more likely to be unhappy with a smokefree ordinance.
- thought that a smokefree ordinance would have little or no effect on Evanston public health were much more likely to be unhappy with a smokefree ordinance.
- disagreed that breathing smoke from other people's cigarettes is harmful to one's health were much more likely to be unhappy with a smokefree ordinance.
- believed that bars should have designated smoking areas versus being completely smokefree were much more likely to be unhappy with a smokefree ordinance.
- agreed that a smokefree ordinance is about the business owners' right to decide their own smoking policies and not about the right to smokefree air were much more likely to be unhappy with a smokefree ordinance.
- agreed that a smokefree ordinance takes away too much personal freedom were more likely to be unhappy with a smokefree ordinance.

7. Conclusions

The majority of adults surveyed in Evanston believed that breathing secondhand smoke is harmful (88%) and that a smokefree ordinance would improve Evanston public health (64%). Almost half (44%) of the respondents said they would be happy with a smokefree ordinance. In addition, most adults preferred completely smokefree restaurants (54%).

Income, employment status, and race did not significantly affect outcomes, while political ideology and sex affected outcomes to some extent. When trying to predict whether a respondent would be happy, neutral, or unhappy with a smokefree ordinance, WYSAC's analysis of six significant variables suggested three key factors for consideration.

The first and most influential factor that affected a person's feelings was an individual's smoking status. This factor affected responses to nearly every question in the survey. While non-smokers (73% of respondents) were much more likely to be happy with a smokefree ordinance, smokers (27% of respondents) strongly opposed such an ordinance. Smokers strongly believed that support for such an ordinance to be a matter of rights, not a matter of health. They expected that their own attendance at bars and restaurants would decrease if Evanston passed a smokefree ordinance, and they thought that a smokefree ordinance would have little or no effect on Evanston public health.

The second key factor concerned the debate between health and rights. Respondents who saw a smokefree ordinance as a health issue strongly supported a smokefree ordinance. Those who saw a smokefree ordinance as a rights issue broke into two groups: those who thought it was the business owner's right to choose a smokefree policy, and those who thought it was an individual's right to breathe smokefree air. Based on the respondent's perception of the underlying issue (health or rights), WYSAC found that

- respondents who saw the right to smokefree air as more important than the business owner's right to decide policy tended to favor a smokefree ordinance.
- respondents who believed that smoking policies should be the right of business owners to decide tended to express unhappiness with a smokefree ordinance.

Finally, the third factor affecting an individual's overall feelings towards a smokefree ordinance concerned the expected economic impact from smokefree legislation. Most people believed that a smokefree ordinance would negatively affect restaurant, bar, and private club revenues (and smokers were far more likely to feel the impact would be negative). The more negative an outcome the respondent expected, the more likely he or she was to be unhappy about passage of a smokefree ordinance.

Although most people anticipated that revenues would decrease for bars, restaurants, and private clubs, the majority of these same individuals also anticipated that *they* would *not* change how often they would go to restaurants and bars. Non-smokers (73% of all respondents) generally anticipated attending restaurants, bars, and private clubs *more often* if a smokefree ordinance went into effect.

Thus, many factors affected people's opinions about a smokefree ordinance. Though reasons varied among individuals, 44% of all respondents said that they would be happy, 32% responded that they would be neutral, and only 24% said that they would be unhappy if Evanston passed a smokefree ordinance.

8. Appendices

8.1 Appendix A: Frequencies

This section contains the raw frequency counts and the percentage distributions of responses to all items on the questionnaire. Survey questions appear in the same order and with the same wording as in the original survey. We excluded missing data such as “refused/no answer” or “don’t know/not sure” from the percentage calculations, representing them in the “Missing” column.

Percentages may total more or less than exactly 100% due to rounding to one decimal point.

Percentages may also total more than 100% on “check all that apply” items.

HELLO, my name is (first name) . I’m calling from the University of Wyoming, and I’m not soliciting anything. Your phone number was randomly drawn for a public opinion poll about some issues affecting your community. The survey only takes about 10 minutes. Would you be able to help me out with this tonight?

[If Yes] **First, I need to confirm. Is this a private residence in Wyoming?**

[If Yes] **That’s great! The University will keep your answers completely confidential. Also, I need to ask if I am speaking with someone 18 or older.**

[If Yes] **Survey begins.**

Frequency Distributions

1. How long have you lived in Evanston? (q5r)

(Collapsed variable)

	Frequency	Valid Percent
Less than 1 year	15	3.2%
1–5 years	86	18.5%
6–10 years	67	14.4%
11–20 years	106	22.7%
21–30 years	104	22.3%
More than 30 years	88	18.9%
Valid Total	466	100.0%
Whole life (but age not provided)	12	
Don't know	1	
Total	479	

2. How long have you lived in Wyoming? (q10r)

(Collapsed variable)

	Frequency	Valid Percent
Less than 1 year	12	2.6%
1–5 years	62	13.4%
6–10 years	49	10.6%
11–20 years	88	19.0%
21–30 years	109	23.6%
More than 30 years	142	30.7%
Valid Total	462	100.0%
Whole life (but age not provided)	15	
Don't know	2	
Total	479	

3. In the past 12 months, has anyone in your household seen a doctor, nurse, or other health professional to get any kind of care? (q15)

	Frequency	Valid Percent
Yes	408	87.2%
No	60	12.8%
Valid Total	468	100.0%
No answer	4	
Unknown	7	
Total	479	

4. In the past 3 months, has anyone in your household seen a doctor, nurse, or other health professional for a heart or lung problem? (q20)

	Frequency	Valid Percent
Yes	57	14.0%
No	350	86.0%
Valid Total	407	100.0%
No answer	4	
Unknown	7	
Refused	1	
System missing	60	
Total	479	

5. The next few questions are about some of the service businesses in your community. In the past 30 days, about how often has anyone in your household eaten a meal in a full-service, sit-down restaurant? (q30)

	Frequency	Valid Percent
15 meals or more	26	5.5%
10–14 meals	22	4.6%
5–9 meals	84	17.6%
1–4 meals	246	51.7%
No meals in the past month	98	20.6%
Valid Total	476	100.0%
Don't know	2	
No answer	1	
Total	479	

6. We also need to ask about places that mainly serve liquor, like bars or cocktail lounges. In the past 30 days, about how often has anyone in your household had something to drink at a bar or cocktail lounge in Evanston? (q40)

	Frequency	Valid Percent
15 times or more	9	1.9%
10–14 times	9	1.9%
5–9 times	22	4.6%
1–4 times	95	20.0%
Not at all in the past month	341	71.6%
Valid Total	476	100.0%
Don't know	2	
No answer	1	
Total	479	

7. In the past 30 days, about how often has anyone in your household eaten a meal at a private club? (q50)

	Frequency	Valid Percent
10-14 meals	13	2.7%
5-9 meals	0	0.0%
1-4 meals	38	8.0%
No meals in the past month	423	89.2%
Valid Total	474	100.0%
Don't know	4	
No answer	1	
Total	479	

8. Does any member of your household work in a full-service, sit-down restaurant; a bar or cocktail lounge; or a private club? (q55)

	Frequency	Valid Percent
Yes	20	4.2%
No	451	95.8%
Valid Total	471	100.0%
No answer	8	
Total	479	

9. For the next question, I'd like you to imagine that you have traveled by yourself to a nearby community, and now it's time to pick a restaurant for your dinner. You have three almost identical restaurants to choose from, except one allows smoking anywhere, the second allows smoking only in a designated smoking area, and the third does not allow smoking at all. Which one of those three restaurants would you be most likely to pick? (q60)

	Frequency	Valid Percent
The one that allows smoking anywhere	34	7.5%
The one that allows smoking in a designated area	127	28.2%
The one that does not allow smoking in any areas	290	64.3%
Valid Total	451	100.0%
Don't know	20	
No answer	8	
Total	479	

10. There has been quite a bit of talk lately about smoking in restaurants. Which of the following statements best describes your own opinion? (q65)

	Frequency	Valid Percent
Smoking should be allowed in all areas.	9	1.9%
Smoking should be allowed only in designated areas.	209	44.2%
Smoking should not be allowed in any areas.	255	53.9%
Valid Total	473	100.0%
Don't know	3	
No answer	3	
Total	479	

11. What about in bars and cocktail lounges? Which of the following best describes your opinion on that? (q70)

	Frequency	Valid Percent
Smoking should be allowed in all areas.	143	34.6%
Smoking should be allowed only in designated areas.	163	39.5%
Smoking should not be allowed in any areas.	107	25.9%
Valid Total	413	100.0%
Don't know	44	
No answer	22	
Total	479	

12. And how about in private clubs where food is served? (q75)

	Frequency	Valid Percent
Smoking should be allowed in all areas.	54	13.6%
Smoking should be allowed only in designated areas.	203	51.0%
Smoking should not be allowed in any areas.	141	35.4%
Valid Total	398	100.0%
Don't know	57	
No answer	24	
Total	479	

13. With which of the following two statements do you agree more? (q80)

	Frequency	Valid Percent
The citizens should have the right to have smokefree air in public businesses	189	40.7%
Business owners should have the right to decide the smoking policy for their businesses.	275	59.3%
Valid Total	464	100.0%
Don't know	11	
No answer	4	
Total	479	

14. Some communities in Wyoming are considering laws to eliminate smoking from restaurants, bars, clubs that serve food, and other public places. If a law like that were passed in Evanston, how would you feel about it? Would you be happy, unhappy, or would you be neutral about it? (q85)

	Frequency	Valid Percent
Happy	209	43.9%
Neutral	152	31.9%
Unhappy	115	24.2%
Valid Total	476	100.0%
Don't know	3	
Total	479	

15. Which of the following statements *best* describes your opinion of the effect that such a law would have on the health of Evanston? (q90)

	Frequency	Valid Percent
It would have a positive effect on the health of the citizens of Evanston.	289	63.5%
It would have little or no effect on the health of the citizens of Evanston.	141	31.0%
It would have a negative effect on the health of the citizens of Evanston.	25	5.5%
Valid Total	455	100.0%
No opinion	15	
No answer	9	
Total	479	

16. Of the following statements, which one *best* describes what effect you think such a law would have on those restaurants that previously allowed smoking? (q95)

	Frequency	Valid Percent
Down over a long time	70	15.4%
Down for a while	179	39.3%
No effect	129	28.3%
Up for a while	12	2.6%
Up over a long time	66	14.5%
Valid Total	456	100.0%
No opinion	18	
No answer	5	
Total	479	

17. What about bars and cocktail lounges? I will read the same statements. Please tell me which *one* in your opinion *best* describes the effect that such a law would have on *bars* in the city of Evanston. (q100)

	Frequency	Valid Percent
Down over a long time	158	36.4%
Down for a while	154	35.5%
No effect	93	21.4%
Up for a while	6	1.4%
Up over a long time	23	5.3%
Valid Total	434	100.0%
No opinion	35	
No answer	10	
Total	479	

18. Next, we'd like to know if you think a non-smoking law would affect how often your own household goes to sit-down restaurants in Evanston for meals. (q105)

	Frequency	Valid Percent
No change	302	63.6%
Less often	43	9.1%
More often	42	8.8%
Not as many	13	2.7%
More different ones	75	15.8%
Valid Total	475	100.0%
Don't know/No answer	4	
Total	479	

19. We also want to know if you think such a law would affect how often your household goes to bars or cocktail lounges in Evanston. (q120)

	Frequency	Valid Percent
No change	380	81.5%
Less often	50	10.7%
More often	21	4.5%
Not as many	6	1.3%
More different ones	9	1.9%
Valid Total	466	100.0%
Don't know/No answer	13	
Total	479	

20. Can you think of any other ways that your household's entertainment choices will be affected by the ordinance? (q125)

→ See Appendix B for complete text listings.

21. In deciding whether you favor or oppose such a law for you personally, would you say (q130)

	Frequency	Valid Percent
It comes down to a question of health.	173	38.3%
It comes to a question of rights.	279	61.7%
Valid Total	452	100.0%
Don't know/No answer	27	
Total	479	

22. Which of the following statements best describes the smoking policy in your own home? (q135)

	Frequency	Valid Percent
Smoking is allowed everywhere in the home.	53	11.1%
Smoking is allowed only in some areas or at some times.	72	15.1%
Smoking is not allowed anywhere in the home.	352	73.8%
Valid Total	477	100.0%
Don't know	2	
Total	479	

23. Now I am going to read two statements. I would like you to tell me to what extent you agree or disagree with each of them.

"Breathing smoke from other people's cigarettes is harmful to one's health." (q140)

	Frequency	Valid Percent
Strongly agree	274	57.8%
Agree	145	30.6%
Feel neutral	30	6.3%
Disagree	16	3.4%
Strongly disagree	9	1.9%
Valid Total	474	100.0%
Don't know	3	
No answer	2	
Total	479	

24. "A law against smoking in restaurants and bars takes away too much personal freedom from individuals." (q145)

	Frequency	Valid Percent
Strongly agree	90	19.3%
Agree	101	21.7%
Feel neutral	82	17.6%
Disagree	112	24.0%
Strongly disagree	81	17.4%
Valid Total	466	100.0%
Don't know	12	
System	1	
Total	479	

25. How many children age 17 or younger live in your household? (q150)
(Collapsed variable)

	Frequency	Valid Percent
0	241	50.6%
1	81	17.0%
2	82	17.2%
3	39	8.2%
4	24	5.0%
5	3	0.6%
6 or more	6	1.3%
Valid Total	476	100.0%
Refused	3	
Total	479	

26. *Including* yourself, how many people age 18 or older live in your household? (q155)
(Collapsed variable)

	Frequency	Valid Percent
1	117	24.6%
2	295	62.1%
3	44	9.3%
4	15	3.2%
5	3	0.6%
6 or more	1	0.2%
Valid Total	475	100.0%
Unknown	2	
Refused	2	
Total	479	

27. I need to ask how many different phone numbers ring into this residence that can be answered by a person. Please do not count cell phones, numbers used only for a business, or fax or computer lines that cannot receive voice calls. *Including* the one we're talking on right now, how many different phone numbers ring in this residence that can be answered by a person? (q160)

	Frequency	Valid Percent
Just this one	441	92.8%
Two	21	4.4%
Three	10	2.1%
Four	3	0.6%
Valid Total	475	100.0%
Don't know/No answer	4	
Total	479	

28. What is the highest level of school you have completed or the highest degree you received? (q165)

	Frequency	Valid Percent
Less than Grade 12	22	4.6%
High-school diploma or GED	164	34.5%
Some college, no degree	96	20.2%
Community college graduate (2-year AA, technical or academic)	68	14.3%
College graduate (4-year BA or BS)	86	18.1%
Some graduate or professional school	10	2.1%
Graduate or professional degree	30	6.3%
Valid Total	476	100.0%
Refused	3	
Total	479	

29. We hear a lot these days about different political labels, like conservative, liberal, middle-of-the-road, libertarian, and so on. Which of those four labels comes closest to your own political views, most of the time? (q170)

	Frequency	Valid Percent
Conservative	170	44.3%
Liberal	84	21.9%
Middle-of-the-road	116	30.2%
Libertarian	14	3.6%
Valid Total	384	100.0%
Don't know/No answer	95	
Total	479	

30. Which of the following *best* describes your current employment status? (q175)

	Frequency	Valid Percent
Full-time employed	284	59.7%
Part-time employed	33	6.9%
Student, and also employed	19	4.0%
Student, and not employed	8	1.7%
Homemaker	33	6.9%
Retired or disabled	88	18.5%
Not currently employed and not in school	11	2.3%
Valid Total	476	100.0%
Refused	3	
Total	479	

31. Which of the following statements best describes the smoking policy in the indoor work areas where you are employed? (q180)

	Frequency	Valid Percent
Smoking is allowed in all indoor work areas.	18	5.4%
Smoking is allowed only in some of the indoor areas.	68	20.5%
Smoking is not allowed in any indoor work areas.	222	67.1%
There are no indoor work areas where I am employed.	23	6.9%
Valid Total	331	100.0%
Don't know	4	
No answer	1	
System missing	143	
Total	479	

32. Do you smoke cigarettes every day, some days, or not at all? (q185)

	Frequency	Valid Percent
Every day	106	22.2%
Some days	25	5.2%
Not at all	346	72.5%
Valid Total	477	100.0%
Refused	2	
Total	479	

33. During the past six months, have you stopped smoking for one day or longer because you were trying to quit smoking? (q190)

	Frequency	Valid Percent
Yes	55	42.0%
No	76	58.0%
Valid Total	131	100.0%
System missing	348	
Total	479	

34. Are you seriously considering stopping smoking within the next six months? (q195)

	Frequency	Valid Percent
Yes	64	52.9%
No	57	47.1%
Valid Total	121	100.0%
Don't know/Not Sure	10	
System missing	348	
Total	479	

35. What is your age? (q200r)

(Collapsed variable)

	Frequency	Valid Percent
18-24	39	8.3%
25-34	91	19.3%
35-44	86	18.3%
45-54	129	27.4%
55-64	69	14.6%
65 and older	57	12.1%
Valid Total	471	100.0%
Not sure	1	
Refused	7	
Total	479	

36. And which of the following would you say best describes your race or ethnic group?
(q205)

	Frequency	Valid Percent
White, non-Hispanic	449	94.5%
Hispanic	13	2.7%
American Indian or Alaska Native	4	0.8%
Asian	0	0%
Black or African American	1	0.2%
Native Hawaiian or other Pacific Islander	2	0.4%
Other (to include 2 or more)	6	1.3%
Valid Total	475	100.0%
Refused	4	
Total	479	

37. I'm going to read a list of income ranges. Please stop me when you hear the one that best describes your household's total income, before taxes, for last year. (q210)

	Frequency	Valid Percent
Less Than \$25,000	80	18.5%
\$25,000 to \$50,000	147	33.9%
\$50,000 to \$75,000	105	24.2%
\$75,000 to \$100,000	61	14.1%
Over \$100,000	40	9.2%
Valid Total	433	100.0%
Don't know/No answer	46	
Total	479	

38. This is the end of the survey. Do you have any comments that you would like to make at this time? (q215)

→ See Appendix B for complete text listings.

39. Thank you for your cooperation! Respondent's sex (code without asking)? (q220)

	Frequency	Valid Percent
Male	205	42.8%
Female	274	57.2%
Valid Total	479	100.0%

8.2 Appendix B: Open-ended questions

This appendix presents responses to open-ended questions.

23. Can you think of any other ways that your household's entertainment choices will be affected by the ordinance? (q125)

Attend more outdoor activities
Bee-bop bands encourage actions like that. We only go to eat at McDonald's.
Bigger groups, like workplace dinners, church groups; it would have an effect on us as a group in a positive way.
Family might go bowling because hate leaving the bowling alley smelling like cigarette smoke. Get gas at different truck stops; avoid them because they are too smoky.
Go bowling more often and just go places more often, go to Flying J, more often.
Go to race track more often if there was a no-smoking law.
Go to sporting events (such as ball games or rodeo) more often, outdoor concerts more often.
Husband smokes so might not be willing to go to places that don't allow smoking.
I've had relatives with emphysema so we can't go anywhere smoke is because it's a bigger deterrent than people think it is. Even in designated smoking areas it's just a joke.
I'd be affected because I'm a smoker.
I don't think there should be laws made just on a whim. Somebody just wants this done. I just don't think that it should be allowed.
I don't think so; we don't go to bars and clubs.
I just think the law is ridiculous, personally.
I like to frequent restaurants without smoking.
I might seek a place with outdoor areas where I possibly could smoke.
I think it would be a great thing. We have a bowling alley and my son likes to bowl and play pool and we would go there more often.
It would be improved; more places I could go.
I would go Utah.
I would be more willing to take my kids places with no smoking.
I would enjoy going out more if there is no smoking.
I would smoke more.
I would stay home a lot more.
If I'm going to go to a bar to drink, I'll want to smoke. So if that's what Evanston chooses, I'm staying home.
If smoking was banned at truck stops, that would affect how much time I spend at the truck stop.
If the law was passed, there would be no change.
If they tax a lot on tobacco products, is that going to hurt? If you get a lot of people mad, will it affect the taxes?
In general, less public types of affairs. If laws like that were passed, it would probably extend into other community events and affect participation there as well.
It would be better.
It would give us more options.
It would make a big difference to me.
It would make things more pleasant. Would like to see it done in all public gatherings whether indoor or outdoor.
It would really affect my household. But I think because this is a small city, so the law affects. (?) We are on the border of Utah and we have a lot of people coming to Utah and if the law is passed, Evanston would lose a lot of businesses.

It would severely limit them. It would deprive a big segment of the population of exercising that entertainment option.
It's more pleasant if we had the non-smoking law!
Loss of personal choices
Make us happy
Maybe we might be able to do more things if there was such a law on non-smoking.
Might bowl more
Might go to the bowling alley more often
More activities would be come up with that didn't involve drinking and smoking.
More households will go out.
More inclined to do lunch at a private club if there was no smoking.
More liberated
More outside activities if a no smoking law was passed
No, because not much to do there with the family
Noticed that in concerts in Utah, in most of the venues, even outside, too much control, outside isn't a big deal. Outdoors should not be in those kinds of laws.
Probably spread out participation within the town because it would be smoke-free
Probably wouldn't go out to restaurants as much
Restaurants should choose, have designated area for smoking.
Seeing their grandparents and how they used to smoke and how it damaged their health and the smell.
Smoking hurts my asthma.
Take away smoking in bars is stupid; only like non-smoking with kids.
The air would be nicer; help the health.
The fact that I shy away from smoking establishments
There are already smoke-free places, so I feel that it wouldn't make that big of a change.
Think about it harder before we went out
Use patios and backdoor venues
We'd get take-out food. I think it's taking away personal freedom and it hurts business owners.
We might go bowling more often.
We would be healthier.
We can go bowling. I have small children.
We should have the right to smoke in bars and places that serve food.
We would be happier with it in public places.
We would be more inclined to take our children more places.
We would do a lot more if there was no smoking.
We would go bowling more often.
We would go into some stores that we don't go into now.
We would go to bowling alley more.
We would go to bowling alleys more often.
We wouldn't have to smell like smoke.
Would go bowling alley more often; might go to different truck stops
Would go bowling if it [went] smoke-free
Would go places that didn't allow smoking
Would go to bars and clubs more often if it wasn't for the smoking
Would not go to places not allowed to smoke
Wouldn't be affected
Wouldn't be doing anything

Wouldn't go out to eat if it was banned
Wouldn't affect
Wouldn't go out as much
You pretty much have us stuck home if you're a smoker. I think smokers are being treated like we're the plague or something. Designated areas are the best way to go, instead of eliminating smoking entirely.

38. This is the end of the survey. Do you have any comments that you would like to make at this time? (q215)

All bars in Wyoming should be closed because of smoking.
Although doesn't like smoke, thinks it's a matter of rights of those who smoke versus those who don't like it.
As far as any business goes, I think that business owners should decide the smoking policy for their businesses.
Business owners should have the right whether there is smoking or non-smoking.
Everybody should have their rights. This business owner would like to make the decision because it's their business. Should have designated areas as opposed to going one way or another in the public areas.
Hope they make it legal
I'm 100% behind smoke-free. I think if more people had family members or knew someone with emphysema, they would be more likely to want to have a smoke-free environment.
I'm all for not smoking around people who don't smoke.
I'm an ex-smoker and smokers should have a right to smoke in any establishment that they want.
I'm sick of the politicians telling us how to live and breathe. It's really the special-interest groups who I am sick of.
I agree with the non-smoking issue. Nothing is worse than someone smoking in a restaurant when you are trying to have a good time. I agree with non-smoking in all public areas.
I believe in people's freedom to decide for themselves. Smoking is a hard habit to kick, and if there are smokers in nursing homes that have to go out in the freezing weather to smoke, there should be an inside area.
I do disagree with smoking indoors and public places, but I don't think it is up to the government to decide what an owner can and cannot do. If people want smoke-free air, they can go somewhere else. It's up to the owner.
I feel that there should be smoke-free areas in all of the places listed, including bars. But to ban smoking completely is wrong.
I feel that they are taking away too many rights.
I have health issues and have asthma and I don't go into any restaurants that allow smoking for this reason. The smoke makes me cough.
I have watched the trend of what happens over time. I have seen many changes over my life and through college. I think it will come down to having a smoking ban in the state of Wyoming.
I hope it's a good start to stop smoking in the rest of the businesses in the state of Wyoming.
I hope this survey has a good outcome.
I hope this survey helps out the county.
I hope you have some luck with this survey because smoke will kill you.
I just don't think they should make everything non-smoking; that takes away from people's rights somewhat.
I just hope they pass that law.
I just want to know if they are considering banning smoking in Wyoming.
I really hope that a non-smoking law will be passing sometime in the future!
I resent when I have to breathe second-hand smoke, and I hope this survey helps to instate laws against smoke in public places.
I think it is pretty cool that you are getting an idea about smoking in restaurants. I'm kind of glad that they are trying to pass a law.
I think it's a tough issue because it will affect the rights of the people either way.
I think people should have a choice in places like restaurants, maybe not in every public place.
I think that people should smoke if they want, but there should [be] some kind of law about areas.

I think that this survey is extremely biased and slanted.
I think you should add another question about gambling for economic development, because we are for that.
I would like to see public, outdoor events be non-smoking when there is no way to avoid the smoke from others' cigarettes.
I would strongly support if they passed that law. That would be great.
If the government is going to tax cigarettes, they shouldn't infringe on people's rights to smoke.
If they make a law for smoking, I'm going to live in the God-****ed mountains!
If they took away smoking all together in bars and restaurants, then they would lose business, especially in our area.
If you are asking about restaurants, the main questions would be: is the service good at all, whether or not we ever get our food, and the quality.
In other states where there are non-smoking laws, it's a major inconvenience for anyone who would enjoy a cigarette, like at a bar. It's a form of discrimination.
It's everyone's personal right to smoke.
Living in Evanston, close to Utah. So they see how the non-smoking laws work in Utah and possibly feel more comfortable with banning smoking in public areas.
My son had asthma/pneumonia symptoms and problems when we lived next door to a neighbor who smoked into our window all the time, but when we moved, his symptoms suddenly went away. I would argue strongly that there's a strong correlation between smoking...
Need more restaurants in Evanston
No smoking law would be great and there should be more programs or laws concerning people who chew.
Please bring some good stores to Evanston, bring it out of the 1812s.
Please don't pass this ordinance!
Please don't take the freedom away from people to smoke where they want. There should be designated areas for people. To me this is just Big Brother and people stopping us from having our rights.
Smokers have rights just like non-smokers do. They're infringing on people's rights.
Smoking is a right and should not be infringed on. Freedom is being taken away from those who do not smoke.
Smoking is wrong and it's affecting my family and others, so I am very much against it, and the money could be used for better things like food and things like that.
Tell them leave us alone. Quit trying to decide what happens to our city.
That was a very well-done survey.
The owner of the restaurant/bar should have the right to decide the policy for his business.
The people who work in restaurants and bars have the right to a smoke-free environment as well.
There aren't that many bars here, so smoking is okay. But if you're going to a restaurant, it shouldn't be allowed because people go to eat and not breathe smoke. So it shouldn't be allowed where food is served.
The government should not enforce smoking laws on public business.
Wants to see the California smoking laws in effect in Wyoming
We smokers have rights too.
We want all the rights that you can have, but this law is almost stepping onto Constitutional rights. People should have the right to smoke, but they should also do it in places where it's appropriate.

8.3 Appendix C: Explanation of odds

Often, we hear statements such as, “If an individual has characteristic A, then the odds of that person being happy are X times greater than they would be for a person who did not have characteristic A.” To explain statements such as the one above, it would be helpful to explain both odds and probability. Odds and probability are related, but they are not the same thing. Probabilities are numbers between 0 and 1 (or 0% to 100%), while odds can range from 0 to infinity.

When reading a statement like “a person is twice as likely to have characteristic A,” implicitly the author is using an odds interpretation. For example, if the *probability* of characteristic A is .70, this statement would leave us saying that the *probability* is doubled to 1.40 (e.g., a 140% chance of having characteristic A). However, probabilities cannot exceed 100%, so re-construct the statement with the use of odds. Although odds can be doubled (and doubled into infinity), this doubling does affect the probability. The exact relationship between odds and probability is best expressed through an example.

The odds of an individual having a certain characteristic are calculated as follows:

$$\text{Odds} = \frac{\text{Probability of having the characteristic}}{\text{Probability of not having the characteristic}}$$

For example, if the probability of being happy with the smokefree ordinance is .67, then the odds of being happy are:

$$\text{Odds} = \frac{\text{Probability of having the characteristic}}{\text{Probability of not having the characteristic}} = \frac{0.67}{0.33} = 2$$

Now, consider the effect of being a non-smoker on these odds. For example, if being a non-smoker tripled the odds of being happy, then the odds would now be:

$$\begin{aligned} \text{New Odds} &= \text{Old odds} \times \text{Effect from the new characteristic} \\ &= 2 \times 3 \\ &= 6 \end{aligned}$$

Thus, for this example, the odds that a non-smoker was happy would be 6:1. These odds can then be transformed back into a probability with the following formula:

$$\text{Probability of having the characteristic} = \frac{\text{Odds}}{\text{Odds} + 1}$$

In this case, the probability that a non-smoker would be happy would be:

$$\text{Probability of having the characteristic} = \frac{\text{Odds}}{\text{Odds} + 1} = \frac{6}{6 + 1} = \frac{6}{7} = 0.857$$

In addition, odds can be less than 1:1. This would mean that it is relatively *unlikely* for this characteristic to occur. The closer the odds are to 0, the more unlikely the event is to occur.

Frequently occurring odds are

<u>Odds</u>	<u>Likelihood of occurring (Probability)</u>
1:1	50% chance of occurring
2:1	67% chance of occurring
10:1	91% chance of occurring
20:1	95% chance of occurring
0.5 : 1	33% chance of occurring
0.1 : 1	9% chance of occurring
0.05 : 1	5% chance of occurring

Thus, if a variable has an effect such that the odds go up by a factor of 3, then the probability that an individual has that characteristic have changed in a very meaningful manner. In this report, WYSAC used the criterion of:

<u>Odds increasing by</u>	<u>To mean</u>
1 to 1.999 times	Slightly more likely
2 to 2.999 times	More likely
3 to 9.999 times	Much more likely
10 or more times	Vastly more likely

8.4 Appendix D: Logistic regression results

This section contains more information concerning the analysis in section 6.5 – overall feelings toward a smokefree policy.

WYSAC analyzed the data with a multinomial logistic regression model using multiple predictor variables to determine which variables were most influential for predicting when individuals would be happy, neutral, or unhappy with a smokefree ordinance. A multinomial logistic regression model can be thought of as a generalization of the often-used binary logistic model. In the binary setting, the dependent variable is coded into two dichotomous categories: usually termed “success” and “failure.” Interpretations are formed based on the calculated odds (or log odds) of a person being a “success” against a person being in the reference category of “failure.” Multinomial logistic regression is similar in that comparisons are made against the reference category of “failure”; however, instead of having one category termed a “success,” we now have multiple categories of “success.” We treat these non-reference categories at the nominal level. Because of this coding system, instead of interpreting the odds ratios of being in category B vs. category A (in the binary setting), there will be *two* sets of odds ratios: one set of ratios comparing category B against the reference category A, and a second set of ratios comparing category C against category A. Thus, a multinomial logistic regression simultaneously analyzes two binary logistic regressions with the same reference category.

For the analysis of the Evanston data set, to use the binary coding system, the dependent variable (happiness level) would need to be coded as “happy” vs. “not happy.” Thus, the original three-category coding of “not happy,” “neutral,” and “happy” would have been collapsed into a two-category coding system. In the multinomial setting, the reference category was “unhappy,” and the “success” categories were “neutral” and “happy.” While it may have been possible to perform an ordinal logistic regression, since the dependent variable was coded at the ordinal level, the assumption of consistent odds-ratios did not appear to be supported. As such, we chose to use the multinomial logistic regression procedure.

While WYSAC considered all predictor variables, we retained a reduced set of six statistically significant variables. Because of high correlations between some of the opinion questions, it was not necessary to include every variable. Formation of the final model utilized the stepwise variable selection procedure in SPSS, version 13.0. The final model included the following variables. Coding labels are included for reference.

Response variable

Q85 Overall feeling with the ordinance (Happy, Unhappy, Neutral)

Predictor variables

Q185 Smoking status: 1 = daily, 2 = occasional, 3 = non-smoker

Q90 Effect on health of Evanston; positive = 1, no effect = 2, negative = 3

Q140 Breathing other’s smoke is harmful; strongly agree =1 , strongly disagree = 5

Q70 Smoking policy in bars: 1 = all areas, 2 = designated areas only, 3 = no areas

Q80 Right to smokefree air (1) vs. owner’s right to decide (2)

Q145 Takes away too much personal freedom: 1= strongly agree, 5 = strongly disagree

The overall model was highly significant, $\chi^2(12) = 356.593, p < .001$ with an overall Nagelkerke $r^2 = 0.691$. There was no significant lack of fit based on the chi-squared deviance goodness-of-fit test, $\chi^2(288) = 248.595, p = .955$. By using the respondents' opinions on the six predictor variables, correct classification into the appropriate group (happy, neutral, or unhappy) occurred 73.3% of the time. Thus, these six variables are highly effective in understanding an individual's opinion concerning a smokefree ordinance.

Classification

Observed	Predicted			Percent Correct
	Happy	Neutral	Unhappy	
Happy	142	19	3	86.6%
Neutral	31	67	20	56.8%
Unhappy	3	25	68	70.8%
Overall Percentage	46.6%	29.4%	24.1%	73.3%

The parameter estimates are provided below for each variable. Comparisons are made with the reference category being “unhappy.”

Parameter Estimates

Q85: ^a		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Happy	Intercept	-2.484	1.571	2.499	1	.114			
	q185	1.781	.364	24.006	1	.000	5.936	2.911	12.104
	q90	-1.610	.410	15.408	1	.000	.200	.089	.447
	q140	-1.405	.352	15.948	1	.000	.245	.123	.489
	q70	1.312	.373	12.409	1	.000	3.715	1.790	7.711
	q80	-1.208	.510	5.607	1	.018	.299	.110	.812
	q145	.937	.204	21.199	1	.000	2.552	1.713	3.803
Neutral	Intercept	.074	1.126	.004	1	.948			
	q185	.835	.188	19.803	1	.000	2.305	1.595	3.329
	q90	-.779	.297	6.894	1	.009	.459	.256	.821
	q140	-.531	.193	7.557	1	.006	.588	.403	.859
	q70	.083	.307	.072	1	.788	1.086	.595	1.981
	q80	-.338	.436	.601	1	.438	.713	.304	1.676
	q145	.538	.165	10.573	1	.001	1.712	1.238	2.367

a. The reference category is: Unhappy.

Using the column labeled Exp(B), the odds ratios can be interpreted as follows.

Happy vs. Unhappy

Q185 A person who does not smoke is 5.9 times more likely to be happy with a smokefree ordinance as compared to an occasional smoker and 35.2 times more likely to be happy with a smokefree ordinance as compared to a daily smoker.

Q90 A person who believes that a smokefree ordinance will have a positive effect on the public health of Evanston (as opposed to no effect) is 5.0 (1/0.200) times more likely to be happy with a smokefree ordinance

- Q140 Whether a person agrees or disagrees with the statement, “Breathing smoke from other people’s cigarettes is harmful to one’s health” was coded as 1 = strongly agree to 5 = strongly disagree. For every 1-point decrease in their opinion (more agreement), then the odds of being happy increased by a factor of 4.1.
- Q70 A person who believes bars should be completely non-smoking is 3.7 times more likely to be happy with a smokefree ordinance as compared to someone who believes that bars should have designated smoking areas. A person is 13.8 times more likely to be happy with a smokefree ordinance as compared to someone who believes that bars should allow smoking in all areas.
- Q80 A person who agrees that a smokefree ordinance is about the right to smokefree air (as opposed to the business owner’s right to decide his or her own smoking policy) is 3.3 times more likely to be happy with a smokefree ordinance
- Q145 Whether a person agrees or disagrees with the statement, “A smokefree ordinance takes away too much personal freedom,” was coded as 1 = strongly agree to 5 = strongly disagree. For every 1-point increase in their opinion (more disagreement), then the odds of being happy increased by a factor of 2.6.

Neutral vs. Unhappy

- Q185 A person who does not smoke is 2.3 times more likely to be neutral with a smokefree ordinance as compared to an occasional smoker and 5.3 times more likely to be neutral with a smokefree ordinance as compared to a daily smoker.
- Q90 A person who believes that a smokefree ordinance will have a positive effect on the public health of Evanston (as opposed to no effect) is 2.2 (1/0.459) times more likely to be neutral with a smokefree ordinance
- Q140 Whether a person agrees or disagrees with the statement, “Breathing smoke from other people’s cigarettes is harmful to one’s health” was coded as 1 = strongly agree to 5 = strongly disagree. For every 1-point decrease in their opinion (more agreement), then the odds of being neutral increased by a factor of 1.7.
- Q70 A person who believes bars should be completely non-smoking is 1.1 times more likely to be neutral with a smokefree ordinance as compared to someone who believes that bars should have designated smoking areas. A person is 1.2 times more likely to be neutral with a smokefree ordinance as compared to someone who believes that bars should allow smoking in all areas.
- Q80 A person who agrees that a smokefree ordinance is about the right to smokefree air (as opposed to the business owner’s right to decide his or her own smoking policy) is 1.4 times more likely to be neutral with a smokefree ordinance
- Q145 Whether a person agrees or disagrees with the statement, “A smokefree ordinance takes away too much personal freedom,” was coded as 1 = strongly agree to 5 = strongly disagree. For every 1-point increase in their opinion (more disagreement), then the odds of being neutral increased by a factor of 1.7.

Please note that the variables Q70 (attitude towards smoking policy in bars) and Q80 (right to smokefree air vs. owner's right to decide) were not significant when comparing those who were neutral versus those who were unhappy, but these variables were significant when comparing those who were happy versus those who were unhappy.