

AN ASSESSMENT OF THE HIGHWAY BEAUTIFICATION ACT'S
CONSISTENCY WITH AMERICAN PUBLIC OPINION

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EXECUTIVE SUMMARY

Since its passage in 1965, the Highway Beautification Act has been the single most important piece of legislation regulating outdoor advertising. In order to assess the consistency of the Highway Beautification Act with public opinion, this study analyzes the collective results of major public opinion polls conducted over the past 30 years. A meta-analysis procedure is used in order to establish norms (statistically significant averages) for key variables of interest. Major provisions of the Highway Beautification Act included making billboards legal in areas zoned commercial and industrial areas, subject to size, spacing and height requirements, and providing just compensation for legal billboards that are removed. Thus, variables of interest in this study include the percentage of the public that favors:

- banning billboards in general
- allowing billboards in areas zoned commercial and industrial
- height, spacing and lighting requirements for billboards

Some additional variables of interest are related to the public's perceptions of the costs and benefits of billboards, including whether billboards: are useful to travelers; create jobs; are interesting; harm scenic beauty; and are ugly. The question of whether the benefits of billboards outweigh the costs is also posed.

Since both sides in the regulatory debate over outdoor advertising frequently cite polling numbers, it is important to examine the collective findings of polls done in a variety of locations. To this end, an effort was made to obtain all major polls surveying the American public on its opinions toward outdoor advertising. A total of 51 studies were identified, 36 of which contained questions on variables of interest to this study and followed appropriate data collection techniques. Collectively, these studies contained responses from more than 26,000 Americans.

The findings of this study suggest that the Highway Beautification Act's provisions are remarkably consistent with public opinion. Across the public opinion polls conducted since 1970, the norm for the proportion of the public in favor of a general ban on billboards, is just 21.25%, suggesting that a large majority of the American public favors billboards being legal. This finding is true across the decades studied, as well as across all regions of the nation and across studies of different scopes (e.g., citywide, statewide, regional, national). Notably, it is also the case that support for a ban on billboards in recent years (i.e., the 1990s and 2000s) is lower than was the case in the 1970s. In terms of the zoning restrictions imposed by the HBA, more than three-quarters of Americans surveyed believe billboards should be allowed in areas zoned commercial and industrial.

The results of this study clearly demonstrate that a substantial majority of Americans believe that the benefits of billboards outweigh any costs associated with them. More than 85% believe that billboards are useful to travelers while more than 80 percent agree that billboards both help create jobs and help businesses attract customers. Further, over 83% of the public agrees that billboards are informative and more than 58% describe billboards as interesting. Additionally, only 27.8% of Americans surveyed describe billboards as annoying and less than half (43.2%) believe billboards are ugly. While the results do suggest that the public is concerned about the impact of billboards on scenic beauty, the American public believes that benefits of billboards outweigh the costs, as evidenced by more than 70% agreement with questions asking directly about benefits vs. cost.

A final major finding of this study is strong support for the provision of just compensation when a billboard is removed. More than 70.7% of the public agrees that billboard owners must be provided with just compensation if the government removes a legal billboard.

While public opinion on most of the issues investigated here has remained stable over time, a

few trends are worth noting. First, as mentioned above, the proportion of the public favoring a ban on billboards has actually been lower in the 1990s and 2000s than was the case in the 1970s. Second, consumer agreement that billboards are informative has increased in recent years. Third, it is also clear that the public increasingly agrees that billboards help businesses to attract customers, a meaningful finding in that some opponents of the industry portray billboards as not providing anything of value to either the general public or businesses. Finally, it is clear that there has not been a shift in public opinion away from support of the industry. If anything, the recent trend is toward increased recognition for some of the benefits of outdoor advertising.

In summary, results of this study show a striking consistency between public opinion and the provisions of the Highway Beautification Act. In general, the public sees considerable value of billboards but expresses a desire for responsible regulation due to concerns among some about the impact of billboards on scenery. The consistency of public opinion with the HBA's provisions on the legality of billboards along with zoning and height, spacing and lighting requirements demonstrate the efficacy of the Act.

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INTRODUCTION

Passed in 1965, the Highway Beautification Act (23 US 131) remains the single most important piece of legislation regulating outdoor advertising in the United States (Taylor and Taylor 1994). Inspired by Ladybird Johnson, whose goal was to make highways more scenic, the Highway Beautification Act (HBA) established controls on the Federal-Aid Primary, Interstate, and the National Highway System. In total, the HBA covers more than 300,000 miles of roadway throughout the United States (Outdoor Advertising Association of America 2000).

The HBA established a comprehensive regulatory framework for outdoor advertising (Taylor and Chang 1995). A key provision of the HBA was to restrict signs to areas zoned commercial and industrial by local authorities. A second important aspect of the Act was its creation of size, lighting, and spacing provisions for billboards. In addition to these specific rules governing the form and placement of billboards, the HBA permitted states and localities to impose stricter standards and provided funds for the removal of illegal (signs for which legal permits were never obtained) and nonconforming (signs that were erected legally prior to 1965 but do not conform to the zoning requirements of the HBA). The HBA also prohibited new billboards on portions of Interstates and Federal Aid-Primary roads designated as scenic. A final important aspect of the HBA was that states were allowed to exercise discretion in removing nonconforming billboards provided that billboard owners are paid just compensation for the loss of the billboard.

Subsequent to its enactment, the Highway Beautification Act has been the source of some controversy. Based on data compiled by the Federal Highway Association in 1996, there were nearly 875,000 fewer billboards on roadways covered by the HBA in 1996 as compared to 1965 (FHWA 1997). Moreover, the FHWA report indicated that over 127,000

legal, nonconforming signs had been removed. In spite of these statistics, some critics charge that the HBA has not been an effective law, and that it has actually led to an increase in the number of billboards on federal-aid highways (Environmental Working Group 2000). Some critics even charge that the Highway Beautification Act is a “broken law” that has not lived up to its original intent (Floyd 1989 and 1991; Scenic America 1997; Environmental Working Group 2000).

It is notable and ironic that parties on both sides of the debate over the HBA and the efficacy of outdoor advertising regulation cite public opinion polls to support their positions. For example, Scenic America (2000, fact sheet #5) cites opinion polls from six states in support of its claim that billboards are “ugly, intrusive, and uninformative.” Meanwhile, the Outdoor Advertising Association of America cites public opinion data in support of their arguments that billboards are helpful to consumers, travelers, and businesses and that most of the public find billboards to be interesting.

In order to better assess the HBA’s consistency with public opinion, it is worthwhile to examine the general public’s attitude toward major provisions of the Highway Beautification Act. Over the past twenty-five years, numerous public opinion surveys have been conducted both nationally and in individual states and municipalities aimed at measuring the public’s attitudes toward various aspects of billboard regulation. To date, however, no study has examined the collective findings of these studies. The purpose of this study is to conduct a meta-analysis of these studies in order to establish norms for key variables of interest. In other words, the study will compute averages across all methodologically sound public opinion polls related to key issues relevant to the HBA.

The analysis will examine the public’s opinion toward major issues regarding billboard regulation, including:

- Whether the public supports a ban on billboards.

- Whether billboards provide information to travelers.
- Whether the public at large believes billboards are unattractive.
- Zoning issues (attitudes toward billboards zoned commercial and industrial).
- The advisability of height, lighting, and spacing requirements on billboards.
- Attitudes toward the taking of billboards and just compensation under the 5th Amendment.
- An analysis of attitudes of whether opinions on major variables have been stable over time and across regions will also be conducted.

In the following section, propositions related to public opinion toward provisions of the Highway Beautification Act will be put forward.

These propositions will later be tested in order to assess whether public opinion toward outdoor advertising regulation is consistent with the HBA.

Key Variables in Assessing Public Opinion Toward the HBA

The Legality of Billboards

Part of the essence of the Highway Beautification Act was the recognition that billboard advertising represents a legitimate industry. In establishing zoning rules as well as height, spacing, and lighting requirements, the HBA set ground rules for outdoor advertising but, at the federal level, did not make an attempt to eliminate it. While local municipalities were given the discretion to enact stricter guidelines, the HBA itself establishes that billboard advertising is legitimate if certain regulations are observed.

Clearly, the Highway Beautification Act was not designed to ban billboards completely. Thus, if

public opinion toward billboard advertising in general is consistent with the HBA, the following proposition should hold:

Proposition 1: The public does not support a ban on billboards.

Public Perceptions of the Costs and Benefits of Billboards

To gain insights into the underlying reasons for public support or opposition to billboards, numerous studies have examined the public's view of whether billboards play a positive role in society. Some variables that have been examined by numerous studies include whether people believe that billboards provide useful information to travelers, whether they create jobs, and whether they help businesses to attract customers. Conversely, some studies have asked whether billboards spoil scenic beauty. Another method that several studies have employed to uncover public perceptions of the value of billboards is to ask respondents whether they agree that billboard can be described by certain adjectives. Among these are "interesting," "annoying," "ugly" and "informative."

If public opinion is consistent with the Highway Beautification Act, it is clear that the public should see significant benefits associated with billboard advertising. Thus, the following propositions are posed:

Proposition 2: A majority of the public believes that billboards provide useful information to travelers.

Proposition 3: A majority of the public believes that billboard advertising creates jobs.

Proposition 4: A majority of the public believes that billboard advertising is helpful to business in attracting customers.

Proposition 5: A majority of the public believes that billboard advertising is informative.

Proposition 6: A majority of the public believes that billboard advertising is interesting.

Since the purpose of the Highway Beautification Act was to regulate the billboard industry, one would also have to expect that at least some members of the public see billboards as having some drawbacks. In order to pass such landmark legislation, it is even reasonable to expect that on a few measures public opinion would see some costs associated with outdoor advertising. Thus:

Proposition 7: A majority of the public believes that billboard advertising harms scenic beauty.

Proposition 8: A majority of the public believes that billboard advertising is ugly.

Proposition 9: A majority of the public believes that billboard advertising is annoying.

Given that there is likely to be some difference of opinion on the costs and benefits of billboards, a key question in assessing the HBA is whether the costs of billboards outweigh the benefits. One aspect of assessing this issue is examining the proportion of the population in favor of a ban on billboards. Another is to ask individuals directly as to whether the benefits of billboards outweigh the costs. If the HBA's recognition of billboard advertising as a legitimate industry is supported, the following proposition should hold:

Proposition 10: A majority of the public believes that the benefits of billboards outweigh the costs.

Zoning Restrictions

The Highway Beautification Act allows billboards in areas zoned commercial or industrial areas, but not in areas zoned residential or in areas designated scenic by state legislatures.

Thus, if public opinion is consistent with the HBA act, the following propositions should hold:

Proposition 11: A majority of the public supports billboard advertising in areas zoned industrial and commercial.

Height, Spacing, and Lighting Requirements

Since the HBA mandated that billboards be subject to height, spacing, and lighting requirements, the following proposition would need to hold if public opinion is consistent with this provision:

Proposition 12: A majority of the public believes that billboards should be subject to height, spacing, and lighting requirements.

Just Compensation for Billboard Removal

A final provision of the HBA examined in this study is the provision that billboard owners be provided with just compensation if a billboard is removed due to government regulation (such as a billboard ban or removal of a nonconforming sign). If this provision is supported by public opinion, the following propositions should hold:

Proposition 13: A majority of the public supports billboard owners being provided with just compensation if a legal billboard is removed.

METHODOLOGY

Meta-analysis is a useful tool for assessing a body of research (Hunter and Schmidt 1990). Among the major advantages of meta-analysis is that through a quantitative literature review it allows researchers to 1) develop norms based on numerous studies; and 2) resolve disputes in the literature (Abernethy and Franke 1996).

Moreover, meta-analysis can have important practical applications, especially when a topic is controversial or when a wide range of results have been cited by those interpreting these studies (Farley and Lehmann 1994; Abernethy and Franke 1996). As such, the technique is ideally suited to analyzing public opinion polls on outdoor advertising, as studies have been conducted in different parts of the U.S. over different time periods, and with different demographic mixes in the sample.

The first step in this process was to obtain a comprehensive list of major public opinion polls conducted on outdoor advertising during the period from 1975-2001. This was done by requesting studies from the archives of the Outdoor Advertising Association of America, including studies conducted by groups opposed by the industry. The second step in the process was to qualify each study based on several criteria, including: 1) the existence of questions relevant to provision of the Highway Beautification Act; 2) availability of sufficient information on the survey technique; 3) the sampling technique followed; 4) a lack of bias in the introduction to the study; 5) appropriately worded questions; and 6) questions asked in an appropriate context.

In terms of the sampling technique followed, only studies that attempted to produce a sample that is representative of a larger population (generally through randomization or stratification) were included in the study. Studies using convenience samples were disqualified. Studies with biased introductions were also excluded from the analysis. For example, if an industry or public interest group was identified as the sponsor, the study was disqualified. Moreover, studies that made a clear attempt to portray the industry in one direction or another in the introduction were

disqualified. For example, a study that opened by discussing litter, pollution, junkyards and dirt in the same vein as billboards would be disqualified. Similarly, a study opening by stating specific benefits of billboards before asking any questions would be disqualified.

In terms of wording and sentence structure, questions were scrutinized for following accepted principles of marketing research (avoiding double-barreled questions, using neutral wording, etc.). Any questions that did not meet these guidelines were dropped from the analysis. Questions were also assessed in terms of being asked in the appropriate context -- that being to assess general attitudes toward billboard regulation. The question had to be judged to measure the same underlying construct being investigated. Some questions that touched on similar issues to those studied, but contained contingencies were not included in the analysis.

Similarly, multifaceted hypothetical ballot questions that forced a choice on multiple issues were dropped from the analysis due to the inability to isolate the respondents' stances on the specific issues studied. A list of model questions that measured each of the underlying constructs is shown in Appendix A. To be included in the analysis, the question asked had to be judged to be measuring the same underlying construct being measured by the model question.

The third step in the meta-analysis process was to establish norms on the key variables of interest in the study, which were derived from the propositions discussed earlier in this report. In developing mean measures, percentage agreement and disagreement scores were tabulated, with neutral responses and non-responses being dropped. In general, the proportion of neutral responses and non-response was very low, in most cases fewer than ten percent of responses. Norms were computed by averaging the mean values from each qualified study.

Fifty-one public opinion polls were obtained that explore issues related to outdoor advertising. After eliminating studies for which information on

specific question wording could not be obtained and studies that did not ask a question that matched any of the model questions closely enough, thirty-six studies qualified for inclusion in the sample based on the criteria outlined above. Studies included are shown in Appendix B and those examined but not included are shown in Appendix C. Excluded studies generally did not ask any questions that matched the model questions shown in Appendix A, so virtually every major study that has examined these issues since 1975 is included in the analysis.

Summed across the 36 studies included in this report, more than 26,000 respondents' observations are included. For two studies for which the sample size could not be obtained, a sample size of 300 was used as a proxy as it was clear from the reports that at least this many observations had been recorded.

ANALYSIS AND RESULTS

Overall norms for variables of interest are shown in Table 1 along with the number of studies each variable was included in. For variables that have been included in at least ten studies, norms the data was also analyzed by decade (1970s, 1980s, 1990s, 2000s), by region of the country (southeast, southwest, far west, midwest, northeast, and nationwide), and by scope of the survey (city, county, state, nationwide).

The Legality of Billboards

As shown in Table 2, twenty-four studies including more than 16,000 observations have measured public opinion toward banning billboards. The norm across these studies is 21.25%, indicating that only a minority of Americans believe that billboards should be banned, supporting proposition 1. Table 2a shows that results by decade have not varied a great deal, with a mean of 27.3% favoring a ban in the 1970s, 15.7% during the 1980s, 22.8% during the 1990s, and 23.5% for the 2000s (see Table 2a). Contrary to the assertions of those who have argued that

public support for a ban on billboards has increased since the HBA, it is clear that recent years have seen support for a ban than are lower than the levels that characterized the 1970s. Thus, it is clear that, consistent with the Highway Beautification Act, the public does not favor a ban on billboards. This is true across decades (Table 2a), regions (Table 2b) and by scope of study (Table 2c).

Perceptions of the Benefits and Costs of Billboards

Numerous opinion polls have looked into the public's perception of the benefits and/or cost of billboards to society. The norms shown in Table 1 clearly illustrate that a substantial majority of Americans believe that benefits of billboards to society outweigh any costs associated with them.

Proposition 2 predicted that a majority of Americans would agree that billboards provide useful information to travelers. More than 85% of those surveyed in 20 different studies believe that billboards provide useful information to travelers. Thus, proposition 2 is supported. As shown in Table 3a, this is true across all decades included in the study. Additionally a large majority of respondents in all regions where an observation was recorded agree that billboards provide useful information to travelers (Table 3b). Not surprisingly, results by scope of study show the highest level of agreement in national studies, followed by statewide studies, countywide studies, and then individual city studies (Table 3c). However, high levels of agreement were shown across all levels of scope of study.

Other measures also show that the American public believes that billboards have important benefits. Combined results from 9 studies show that more than 80 percent of Americans surveyed believe that billboards create jobs (Table 4), supporting proposition 3. Moreover, consistent with proposition 4, 82.2% of the public has agreed that billboards help businesses attract customers (Table 5). Propositions 5 and 6 predicted that Americans would agree that billboards are informative and interesting, respectively. As

shown in Tables 6 and 7, when asked if billboards are informative, over 83 percent of the public agrees and when asked if billboards are interesting, a majority (58.2%) agrees.

In terms of the potential costs of billboards to society, the public is evenly split on whether billboards harms scenic beauty, with an average of 50.1% of respondents agreeing in comparison to 49.9% who disagree based on the results of seven studies (Table 8). While technically consistent with proposition 7, which predicted that a majority of Americans would agree that billboards harm scenic beauty, the margin is very slim and is not statistically significant. Thus, proposition 7 is not supported. The norm for the four studies that have asked respondents whether they believe that billboards are ugly is 43.2%, refuting proposition 8 (Table 9). Finally, contrary to proposition 9, a six-study average indicates that only 27.8% of the public agreed that billboards are annoying (Table 10). In sum, while some Americans do see billboards as being either harmful to scenery, ugly, or annoying, the norms established in this study suggest that these are not major concerns for most Americans. Additionally, it is clear that the agreement levels with the perceived benefits of billboards are considerably higher than those for the perceived costs.

The results of this study also show that, when asked directly, Americans believe that the benefits of billboards outweigh the costs. For the five studies that have included a direct question on this issues an average of 70.4% of respondents agree that the benefits of billboards outweigh the costs (Table 11). This, proposition 10 is supported by a wide margin.

Zoning Restrictions

Table 12 shows that more than three-quarters of Americans surveyed believe that billboards should be allowed in areas zoned commercial and industrial. This finding supports proposition 11 and is consistent with the framework of the Highway Beautification Act.

Size, Spacing and Lighting Requirements

Since 1975, very few studies have asked the

public whether they favor size, spacing, and lighting requirements for billboards. One study in 1992 asked respondents whether size and location restrictions on billboards were needed and found 45% agreement. Two other studies, conducted in 1997 and 1998, respectively, found high levels of agreement for the notion that there should be size regulations on billboards, with the earlier study recording 87% agreement and the latter 91%. Thus, while there is not sufficient data available to test proposition 12, the limited data that is available appears to provide preliminary support for the notion that most of the public supports size restrictions on billboards.

Just Compensation for Billboard Removal

Table 13 shows that more than seven in ten Americans surveyed agree that the government should pay just compensation to billboard owners when a billboard is removed (Table 13). This finding supports proposition 13. Interestingly, no studies conducted in the 1970s and 1980s posed this question in a way that asked specifically about compensation for billboard removal. However, based on data from a total of ten studies across conducted during the 1990s and 2000-2001, it is clear that the public favors just compensation by a large margin.

Conclusion

Based on the collective results of thirty-six major public opinion polls, it is clear that the American public's attitudes toward billboards are highly consistent with the framework of the Highway Beautification Act. Moreover, these opinions have remained stable over the past twenty-five, suggesting that public opinion would not support any changes in the general framework of the Act, as passed back in 1965.

The results of this meta-analysis convincingly demonstrate that a large majority of the public believes that billboards should be legal. The underlying reasons for this opinion appear to be rooted in most of the public seeing billboards having significant benefits to business, consumers, and society at large, while public opinion is more

split on whether there are costs associated with billboards. Even among those who believe there are costs associated with billboards, many believe that they are offset by the benefits the medium provides. Thus, most Americans see billboards as a legitimate medium that provides significant benefits to society.

In terms of specific aspects of the HBA, the public expresses clear support for zoning restrictions on billboards, favoring permitting billboards in areas zoned commercial and industrial. Preliminary evidence also suggests that the public supports size requirements as provided for in the HBA. The public also strongly supports payment of just compensation to billboard owners when a billboard is removed, again directly supporting a provision in the HBA.

In sum, the Highway Beautification Act, passed in 1965, regulated the billboard industry in a way that is remarkably consistent with the American public's attitudes toward billboards. Over the more thirty-year period covered by this study, public opinion has remained very consistent with the major provisions of the Act and there do not appear to be any trends in the data that would suggest substantial changes anytime in the foreseeable future. To the extent that trends do exist, they largely appear to reflect the public seeing additional value in billboards and do not contradict provisions in the HBA. Thus, the Highway Beautification Act remains consistent with public opinion.

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Appendix A

Model Issues

1. Ban on Billboards
Billboards should be banned.
2. Usefulness to Travelers
Billboards are useful to travelers.
3. Job Creation
Billboard advertising creates jobs.
3. Attracts Customers
Billboards help businesses attract customers.
4. Interesting
Billboards are interesting.
5. Informative
Billboards are informative.
6. Harm Scenic Beauty
Billboards harm scenic beauty.
7. Annoying
Billboards are annoying
8. Benefits vs. Costs
The benefits of billboards outweigh the costs.
9. Allow in commercial and industrial areas
Billboards should be allowed in areas that are zoned commercial and industrial.
10. Height, lighting, and spacing requirements
Billboards should be subject to height, lighting, and Spacing requirements.
12. Just compensation
If a billboard is removed by the government, its owner should be given just compensation for the billboard.

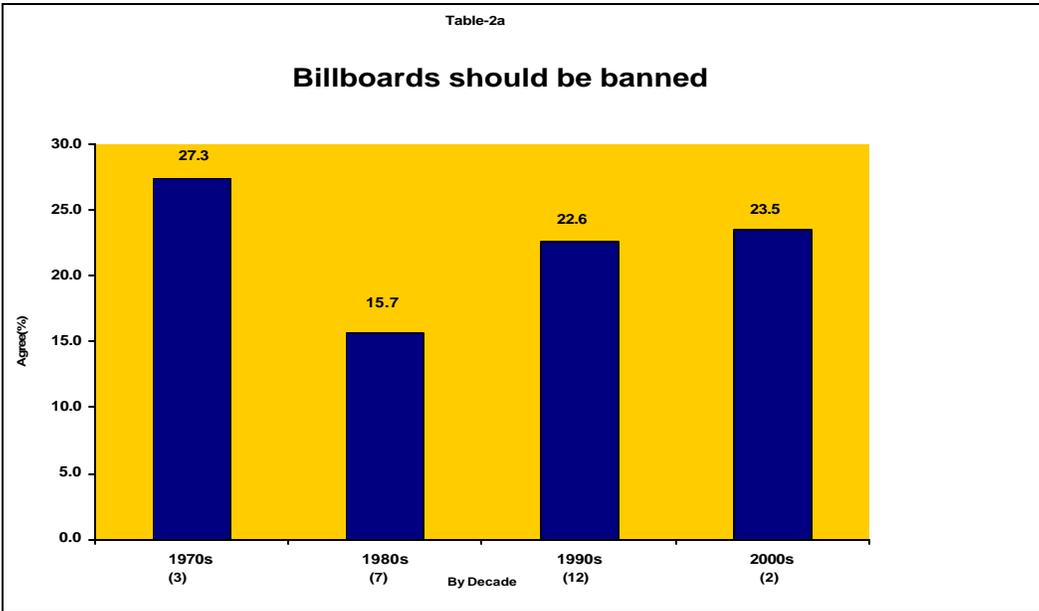
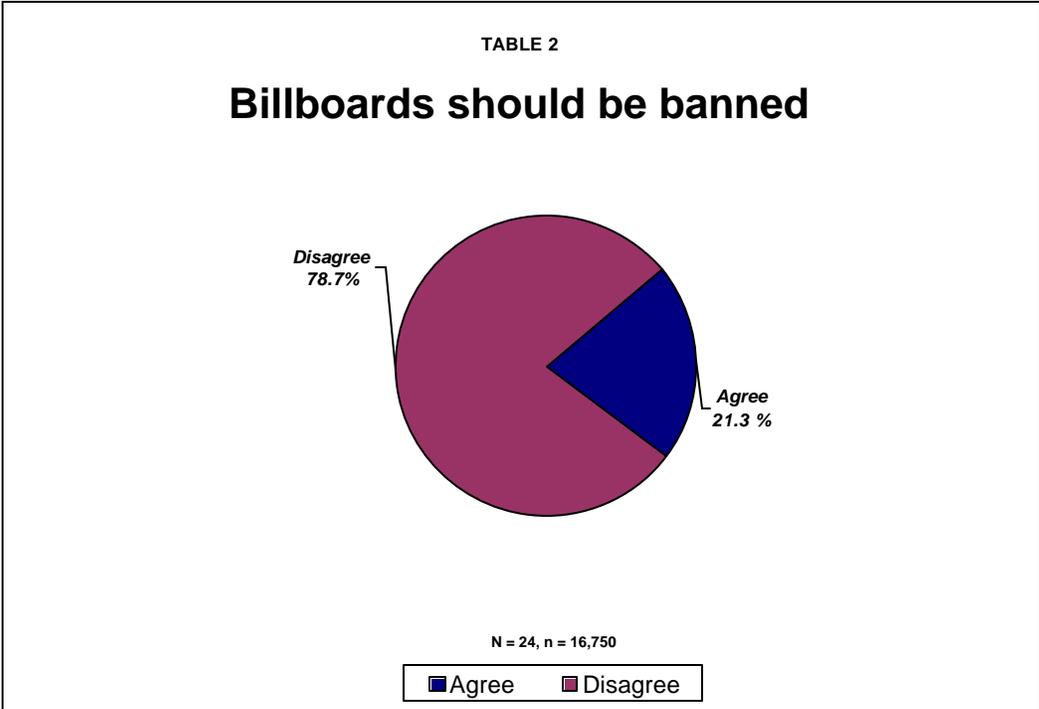
**Appendix B
Summary of Polls**

Year	Month	City	State	Corporation	N
1971	July	Montclair	California	Pacific United Services Corporation	299
1971	November	Fieldscope	California	Field Research Corporation	604
1972	March		Nationwide	Caravan Surveys	2195
1979	July		Nationwide	Nationwide Louis Harris Survey	1508
1981	March		Nationwide	Survey Research Center, U. of Michigan	1400
1985	April	Orlando	Florida	Continental Research Associates	400
1986	February	Tuscaloosa	Alabama	University of Alabama - Birmingham	421
1986	November	Virginia Beach	Virginia	Linda Affelder - Continental Research	400
1986	December	Huntsville	Alabama	University of Alabama	421
1987	April	Roanoke	Virginia	Martin Research, Inc.	300
1987	May		Georgia	Cohn and Wolfe	501
1988	June	Richmond	Virginia	Martin Research, Inc.	300
1989	May	Galvenston County	Texas	University of Houston	400
1989	October	Peoria	Illinois	Bradley University	na
1989	September		Nationwide	Lawrence Research	4100
1990	March	Lakeland	Florida	Martin Research, Inc.	302
1990	April	East Providence	Rhode Island	Rhode Island Survey and Research Sves.	414
1991	April		Nationwide	U.S. Travel Data Center	1061
1991	July	Nashville	Tennessee	20/20 Research	355
1991	July	Houston	Texas	Tarrance & Associates	700
1992	May	Pittsburgh	Pennsylvania	Dataplan Inc.	451
1992	December		Florida	University of Central Florida	300
1993	August	Athens	Georgia	University of Georgia	486
1995	October		Florida	Florida International University	488
1996	September	Houston	Texas	Tarrance & Associates	500
1997	January		Virginia	Virginia Commonwealth U.	801
1997	February		Missouri	Greene Marketing	1243
1997	March		Michigan	Marketing Research Group	600
1997	March		Nationwide	Penn Schoen&Berland	1100
1997	August		Nationwide	Maritz Marketing Research	na
1998	October		South Carolina	University of South Carolina	434
1998	December		Virginia	George Mason University	506
1999	November		Iowa	Essman Research	400
2000	March	Reno	Nevada	Magellan Research	600
2000	November		Missouri	Newhouse- Public Opinion Strategies	600
2001	June		Florida	McWilliams Marketing Services	1165

Appendix C- Studies Reviewed but Not Included

Year	Month	City	State	Corporation	Primary Reason Not Included
1970	January		Washington	Louis Harris and Associates, Inc.	Insufficient information in report
1972	May		Nationwide	Albert Sindlinger Org.	Insufficient information in report
1976	March		Florida	University of Florida	Insufficient information in report
1978	October	Dallas	Texas	Grove and Associates, Inc.	No matching questions
1979	August	Little Rock	Arkansas	R.D. Doubleday Company	No matching questions
1979	September	Lawrence	Kansas	Institute for Social Research, William Jewell College	Insufficient information in report
1981	February	New Hanover County	North Carolina	North Carolina Opinion Research Inc	No matching questions
1984	July		New Hampshire	Univ. of New Hampshire	No matching questions
1985	June	Boston	Massachusetts	Harrison & Goldberg, Inc.	No matching questions
1986	January	New Hanover County	North Carolina	Independent Opinion Research & Communications, Inc.	No matching questions
1986	June	Montgomery County	Maryland	Shugoll Research	Insufficient information in report
1987	January	Guilford County	North Carolina	Harry Gianaris & Associates	No matching questions
1987	August	Wilmington	North Carolina	Independent Opinion Research & Communications, Inc.	No matching questions
1991	June	Stratford	Connecticut	Stratford Planning Commission	No matching questions
1996	August	Houston	Texas	Telesurveys	No matching questions

Table 1					
Norms from 36 Public Opinion Polls					
	Norm	Number of Studies	n	t-statistic	p-value
In favor of a ban on billboard advertising	21.30%	24	16750	-19.58	<.0001
Allow billboards in commercial/industrial areas	76.40%	11	8884	8.163	<.0001
Billboards are useful to travelers	85.10%	20	15784	25.16	<.0001
Billboards create jobs	80.10%	11	5479	10.51	<.0001
Billboards help business attract customers	82.20%	10	4521	12.36	<.0001
Billboards are interesting	58.20%	7	7344	2.07	<.0840
Billboards are informative	83.70%	10	9969	19.78	<.0001
The benefits of billboards outweigh the costs	70.40%	5	3700	10.73	<.0004
Billboards spoil scenic beauty	50.10%	7	4065	0.571	<.5881
Billboards are ugly	43.20%	4	5001	-3.42	<.0420
Billboards are annoying	27.80%	6	3617	-13.12	<.0001
Just compensation provided if billboard removed	70.70%	10	6806	10.46	<.0001



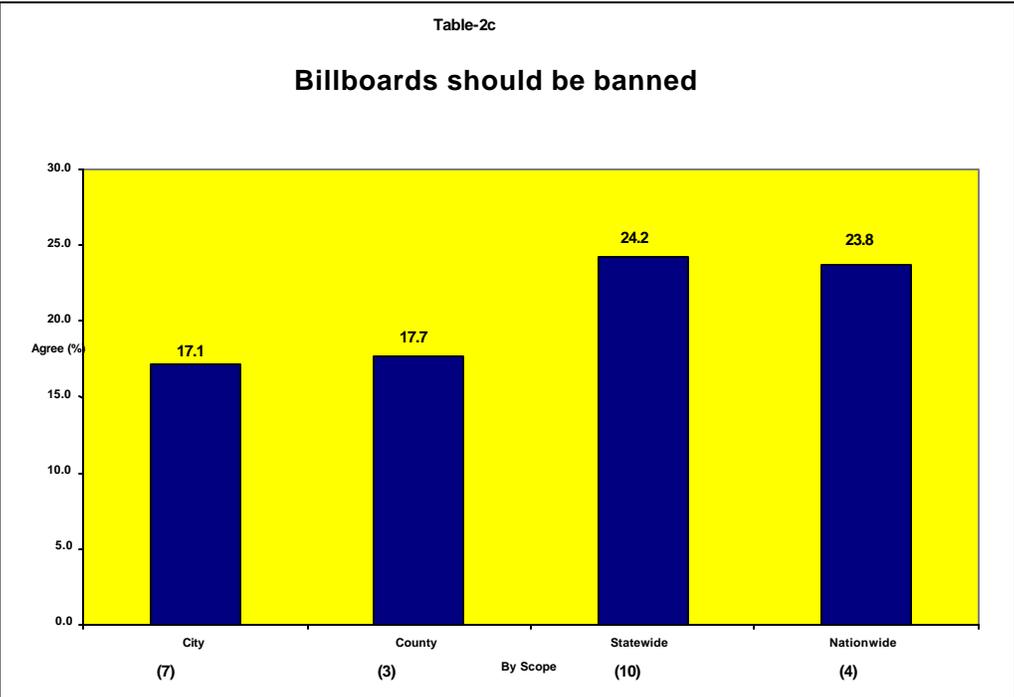
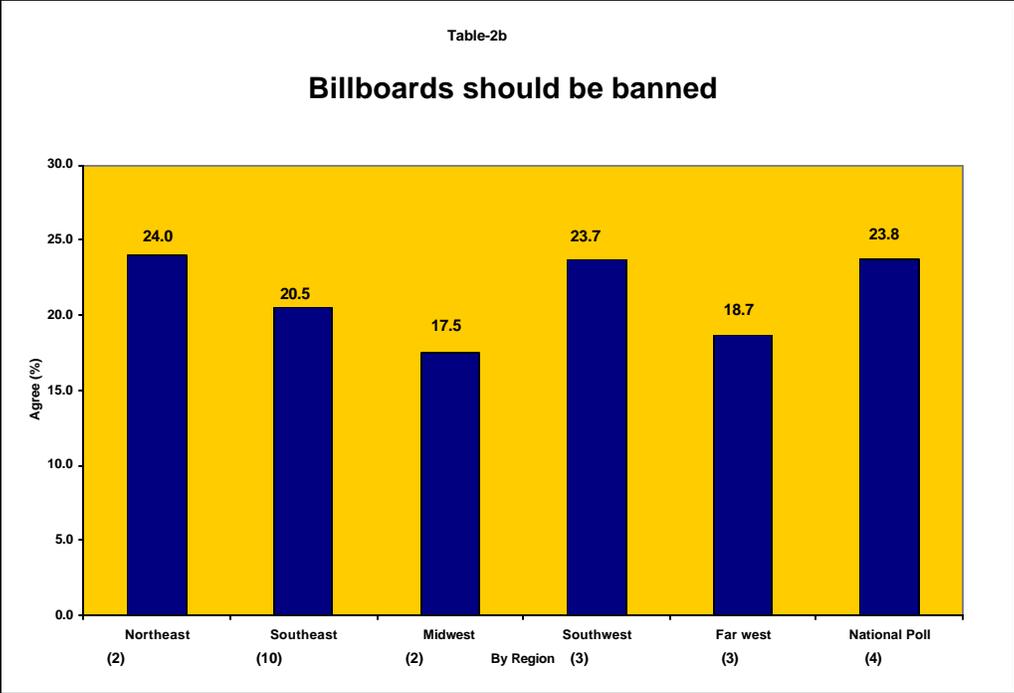
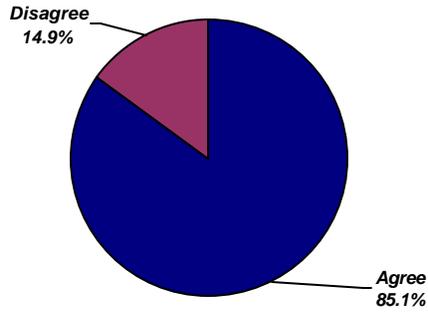


TABLE 3

Billboards are useful to travelers

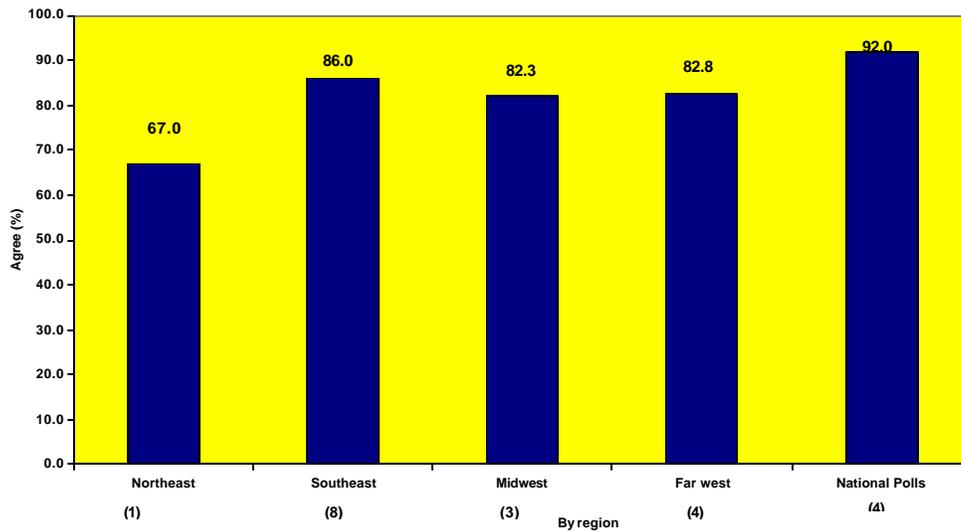


N = 20, n = 15,784



Table-3b

Billboards are useful to travelers



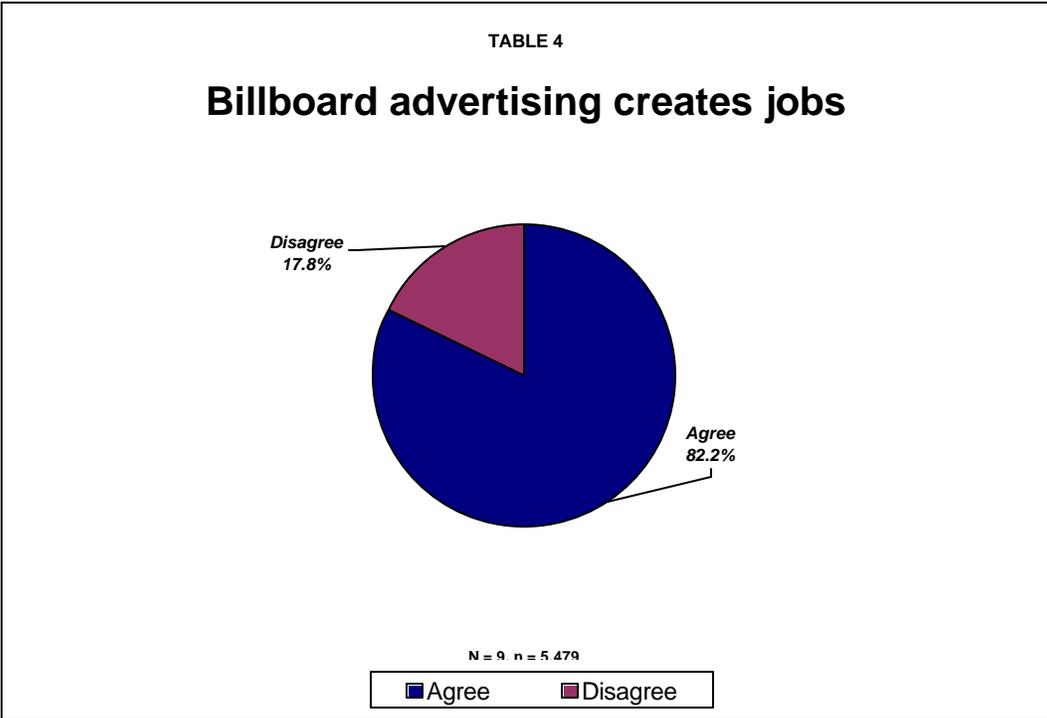
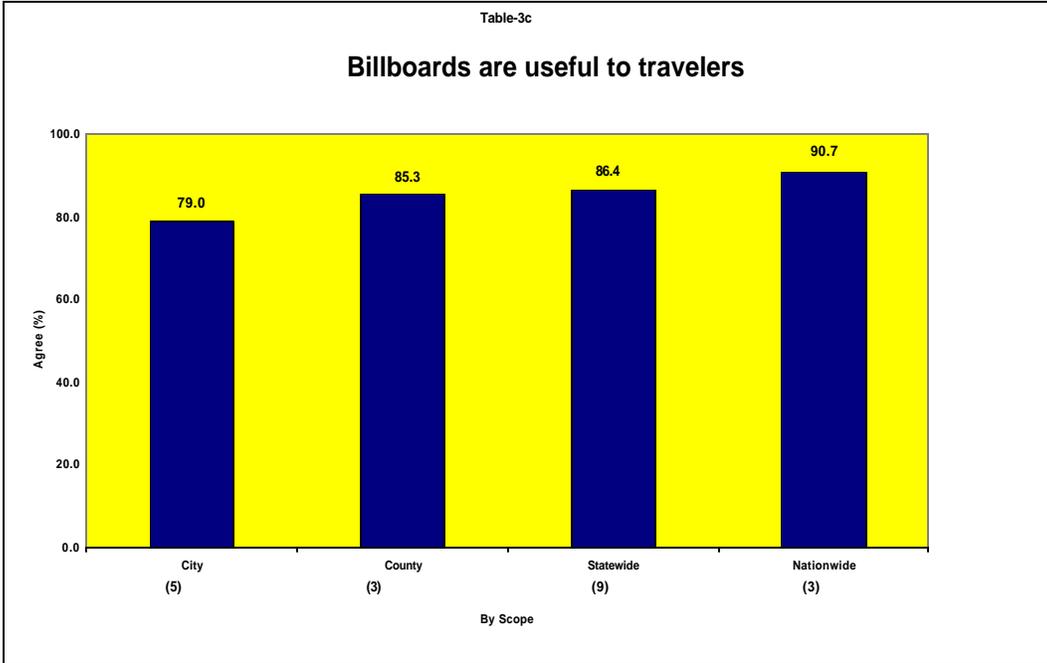
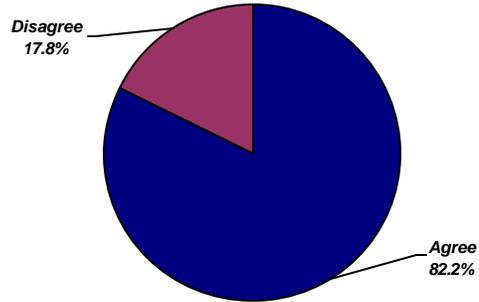


TABLE 5

Billboards help business attract customers



N = 10, n = 4,521



Table-5a

Billboards help business attract customers

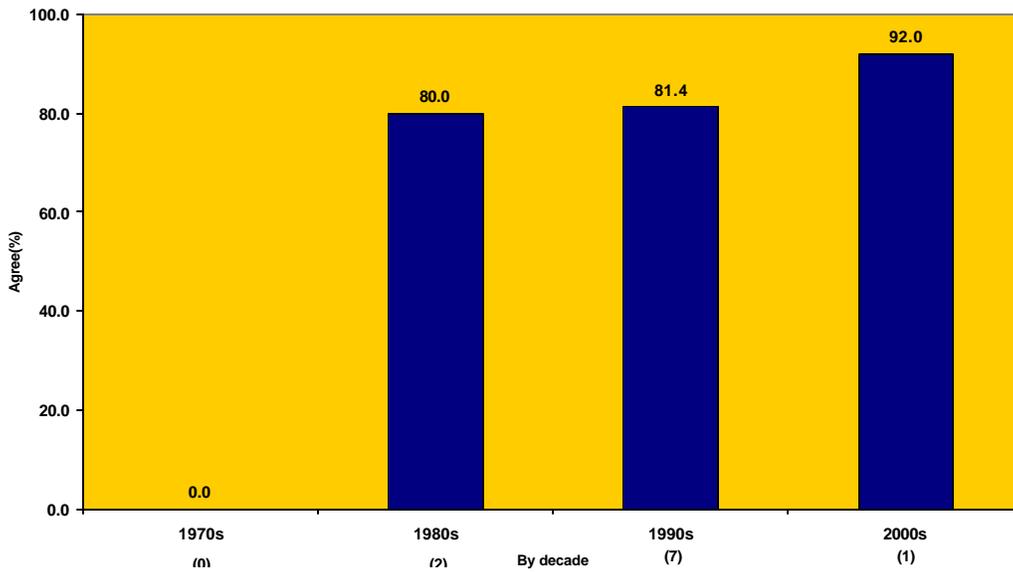
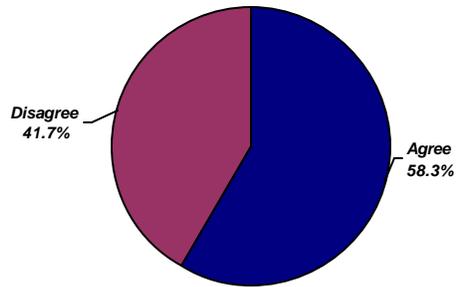


TABLE 6

Billboards are interesting

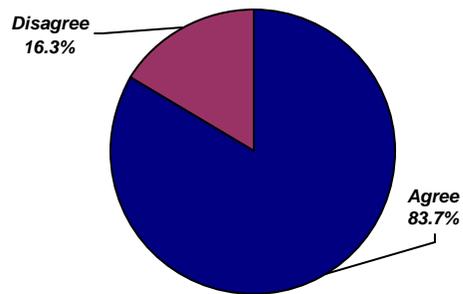


N=7, n = 7,344

■ Agree ■ Disagree

TABLE 7

Billboards are informative



N = 10, n = 9,969

■ Agree ■ Disagree

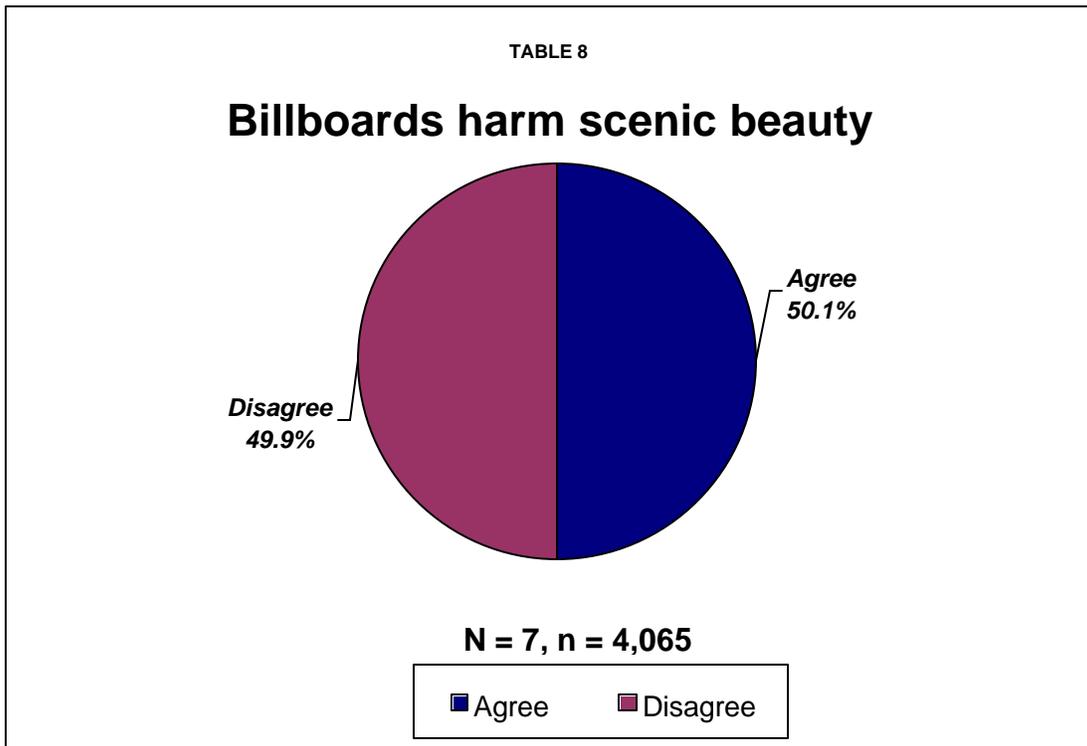
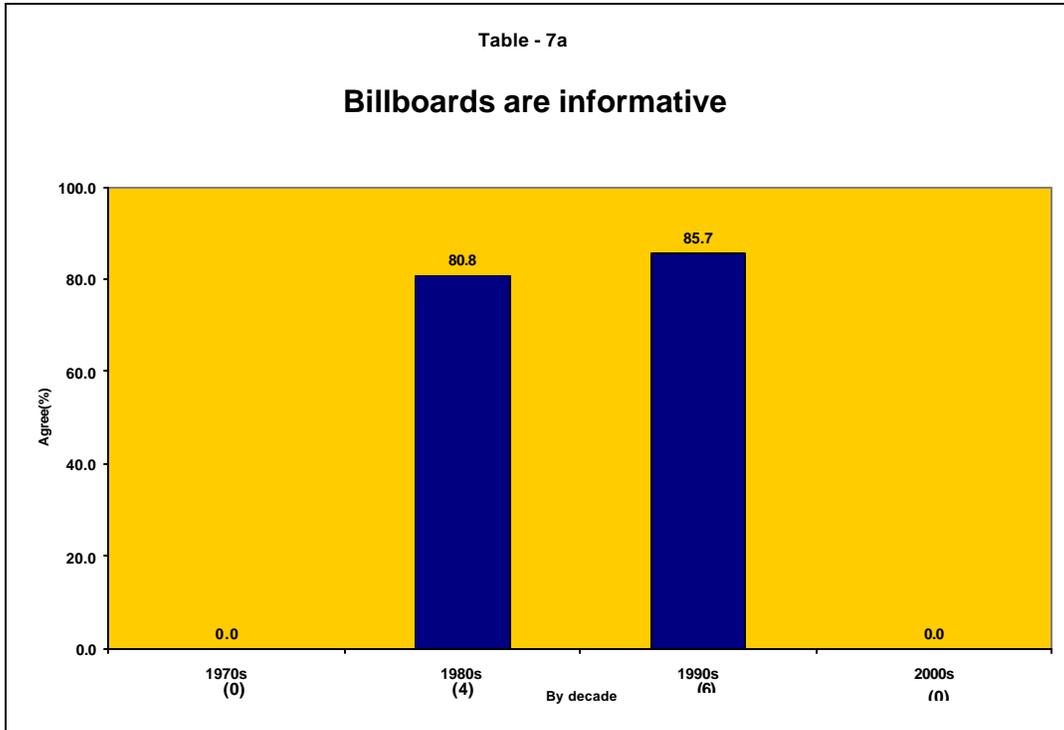
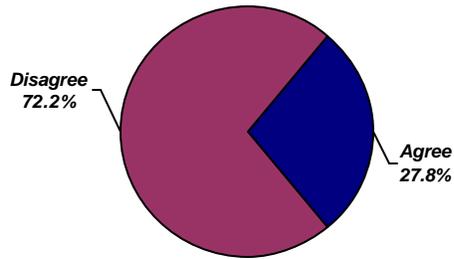


TABLE 9

Billboards are annoying

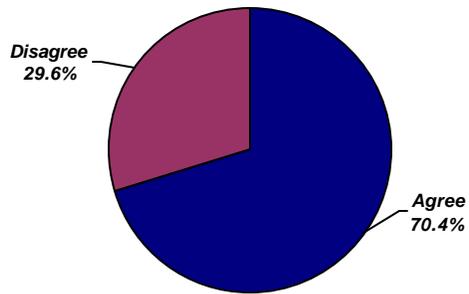


N = 6, n = 3,617



TABLE 10

The benefits of billboards outweigh the costs

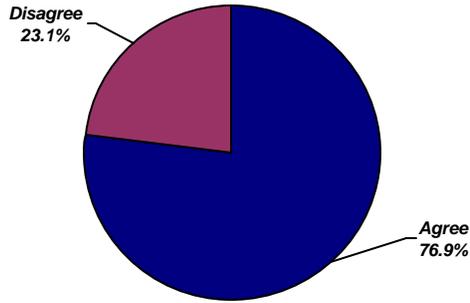


N = 5, n = 3,700



TABLE 11

Billboards should be allowed in areas that are zoned commercial and industrial

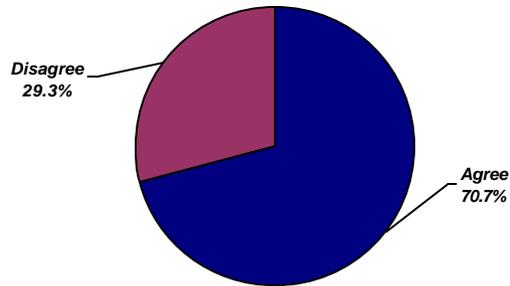


N = 11, n = 8,884



TABLE 12

If a billboard is removed by government, its owner should be compensated for the billboard



N = 10, n = 6,806

