Variation In Medical Marijuana Support

Ian Terayama
Witmer
PLS 591

Abstract

I test whether spatial diffusion meaningfully affects the likelihood of an individual's support for medical marijuana. I use November 2012 CBS/60 Minutes/Vanity Fair National Survey data to build a logistic regression model. I then examine the strength of the relationships between variables and support for medical marijuana. I find that there is a significant relationship between living in a state with or adjacent to a state that has legalized medical marijuana and an individual's support of medical marijuana

Introduction

The legal status of Medical Marijuana is a popular topic in the United States. Recent literature and polling suggests that marijuana usage, particularly in the form of medical treatment, is widely supported. This creates a gap between the public, which seems to be generally more accepting of marijuana, and the law, which prohibits the use of marijuana both recreationally and for medicinal purposes. In the case of medical marijuana, several states have opted to pass legislation allowing for the use of marijuana as a treatment for health problems. However, despite major widespread national support for the legal use of marijuana for medical purposes only a few states have passed medical marijuana legislation. Therefore the research question this paper seeks to answer is: How do we explain the variation in support for medical marijuana amongst individuals in the United States?

The context of this research question is drawn from 2012, but specifically looks at the differences between states that have initiative ballot elections and those that do not. Part of the context comes from the recent 2012-election cycle, which produced two states (Washington and Colorado) that have legalized commercial use of Marijuana, effectively taking a step beyond medical marijuana. This question is important, because as support for medical marijuana continues to grow the likelihood of marijuana related legislation appearing on state ballots in the near future increases as well. The answers to this research question could change the approaches of marijuana and anti-marijuana advocacy groups, whose agendas differ and look to influence related legislation in all states and on the national level as well.

In addition, this question is politically relevant, particularly for political parties and advocacy groups that are looking to make a difference in terms of medical marijuana legislation and on a lesser note marijuana legislation as a whole. Additionally, bureaucrats and health care professionals in states that see a great deal of marijuana related legislation may be interested in the results of this study because it may be able to predict the outcomes of such legislation.

This study seeks to identify the causes that produce support for medical marijuana. This includes the age of an individual, an individual's party affiliation, the religiosity of an individual, and the diffusion of information between states surrounding an individual.

Literature Review

There is a sizeable body of literature regarding marijuana use and its effect on the body. Additionally, there is also a good amount of literature dealing with marijuana and it's standing with the law. However, marijuana legislation is typically studied more in its application rather than its occurrence and this paper intends to examine the causes of high support for medical marijuana. To this end, the literature reviewed here focuses more on the individual opinions of United States citizens regarding the legal status of medical marijuana.

There are four major hypotheses explaining the variation in support for medical marijuana in literature: the age hypothesis, the religion hypothesis, the liberal affiliation hypothesis, and the state ballot initiative hypothesis. In addition, this study will also utilize and examine another body of literature in spatial diffusion hypothesis.

The first theory discussed by the literature is the age theory. The literature also has found that youth in states that have medical marijuana legislation (MML) are more likely to use marijuana and have a lower perception of risk regarding the drug (Wall, Poh, Cerda, Keyes, Galea, Hasin, 2011). Polling data suggests that well over 60% of individuals between the ages of 18-29 supported marijuana legislation whereas other age groups displayed support levels below 50%. This theory suggests that younger individuals are more likely to support marijuana than older individuals (Wall, Poh, Cerda, Keyes, Galea, Hasin, 2011; Thurstone, Lieberman, Schmiege, 2011).

A second theory found in the literature is the religion theory. This theory claims that the more religious an individual is, the less likely they are to support MML in any form. These studies find that as religiosity increases, the use as support for drugs (including and in specific marijuana) decreases (Wallace, Yamagichi, Bachman, O'Malley, Schulenberg, 2007)

The third theory that may be found in the literature is the political ideology theory. This theory states that individuals with a stronger liberal political affiliation are more likely to support medical marijuana legislation. A commonly referenced study for this body of literature is the Gallup 2010 National Poll, which found that self-identified liberals supported marijuana legislation at 72% as opposed to conservatives who supported at 30% (Mendes, 2010).

A fourth theory that appears in the literature is the state ballot initiative theory. This theory states that individuals living in states with MML passed by ballot initiative are more likely to support MMLs, than individuals who live in states without MMLs (Cerda, Wall, Keyes, Galea, Hasin, 2011; Harper, Strumpf, Kaufman, 2012; Wall, Poh, Cerda, Keyes, Galea, Hasin, 2011)

Prior studies have found that respondents from states that have MMLs reported both using marijuana more often having greater dependence on marijuana, than states without similar MMLs (Cerda, Wall, Keyes, Galea, Hasin, 2011). In another study mentioned earlier, it was discovered that respondents living in states with MMLs are also less likely to perceive marijuana as a risk (Wall, Poh, Cerda, Keyes, Galea, Hasin, 2011).

Interestingly, there have also been studies conducted that have found there to be no significant relationship between individuals in states with initiative MMLs and support for medical marijuana (Gorman & Huber, 2006). This contrast within the literature makes States with MMLs an interesting variable to be considered.

A final body of literature to be considered in this study is the spatial diffusion literature. This literature theorizes that the closer an individual is to a type of activity or change, the more likely they are to conform to it. Policy diffusion, or the spread of policy among jurisdictions, has been studied on several levels of jurisdiction, particularly at the state level (Berry & Berry, 1990; Boehmke & Witmer, 2004; Boushey, 2010; Karch, 2007). Literature suggests that one source of policy diffusion is emulation, where policymakers adopt policy that has already been enacted by other administrations. (Shipan & Volden,2008; Shipan & Volden, 2006). Further studies also indicate that state level policymakers most likely look to nearby states for emulation based on shared similarities including convenience, political networking, and shared media markets (Walker, 1969; Rogers, 1995; Mintrom & Vergari, 1998; Mooney, 2001).

Media markets are geographic areas, sharing media content (television, newspapers, radio, internet, etc.). Individuals within these media markets receive the same content, particularly major television and newspaper groups (Fowler & Ridout, 2009). Literature also indicates that differences in media markets may lead to differences in information environments (Cho,2011).

By introducing information to individuals, media markets act as a vehicle for policy emulation. Literature suggests that mass media may influence the

perceptions of citizens (Lindblom, 1977; McCombs & Shaw, 1972; Entman, 1989) thereby indirectly influencing policymakers through the preference of their constituencies (Kingdon, 1995; Pacheco, 2012).

An economic study found that Illinois municipalities would change tax rates to match neighboring areas that presented more beneficial tax rates (Wu & Merriman, 2011). In this same vein, this study is interested in seeing if the neighboring relationships described by this body of literature will reflect similarly in individuals whose states border states with MMLs.

This material is important as it may be able to explain and predict future outcomes of marijuana legislation as well as individual responses to legalized medical marijuana.

Hypothesis

Hypothesis 1: As the age of respondents increases, their support for medical marijuana decreases.

This hypothesis is based in literature that finds that younger individuals are more likely to use and support pro marijuana legislation than older individuals. Research has found that in anonymous surveys, younger respondents (Under the age of 30) were typically more accepting of marijuana than older respondents (Mendes, 2011) indicating that marijuana support may be related to an individual's

age. This hypothesis argues that age is a determining factor in an individual's opinion of medical marijuana.

Hypothesis 2: As the religiosity of individuals increases, their support for medical marijuana decreases.

This hypothesis argues that the more religious and individual is, the less likely they are to support medical marijuana. This hypothesis suggests that religion is a strong deterrent against illegal drugs including marijuana.

Hypothesis 3: As liberal political affiliation increases, support for medical marijuana increases.

This hypothesis argues that the more liberal a person is, the more likely they are to support medical marijuana (Mendes, 2010). Overall, the literature agrees that in general people identifying themselves closer to liberal support marijuana in greater numbers than individuals closer identifying themselves to conservatives.

Hypothesis 4: Individuals living in states bordering other states with MMLs or in states with MMLs, are more likely to support medical marijuana than individuals who do not.

This hypothesis argues that individuals living near states with MMLs are more likely to support medical marijuana than individuals who do not. The literature suggests that this is a possible result of spatial diffusion theory and economic diffusion. This hypothesis is the one that will be supported by this paper.

Data

The data used in this study is an opinion survey conducted by CBS News as part of the CBS News/60 Minutes/Vanity Fair National Survey. This particular data set was collected in November 2012 and as a result is appropriately named CBS News/60 Minutes/Vanity Fair National Survey, November #2, 2012. Additionally, tests were performed on other data samples of the same series using the same survey, specifically the data from the October 2011 and October 2010.

All data sets were taken from the ICPSR database and is significant to the research question as it contains a significant amount of survey responses, 1100, and accounts for several variables to allow for testing of the research question. In addition, this data set contains respondents from all 50 states including the District of Columbia. In addition a section of this opinion survey focused on the individual opinions of respondents regarding marijuana use with a question specifying the use of medical marijuana.

The data is important, because this study focuses on the likelihood of individuals to support medical marijuana. The data contains a direct question providing us a solid measure with regards to the dependent variable, and in regards to independent variables the data is notable for it's breadth (as a national survey

with respondents from all 50 states) and the depth of the survey (87 different variables within the data set). Ultimately, the data allows for a reasonable model to be constructed through the use of the survey responses.

Methods

As stated earlier, the data utilized in this study comes from the CBS News/60 Minutes/Vanity Fair National Survey with the sample being individuals polled from across the country in November 2012 (CBS News/60 Minutes/Vanity Fair National Survey, November #2, 2012).

Due to the dichotomous nature of the dependent variable (Medical Marijuana approval), a logistic regression is the preferred method of analysis. In addition, by using a logistic regression, this study is able to predict the percent probability that an individual is more likely to support medical marijuana. Additionally, a margins command was run on all significant variables to compare the percentages of particular variables when all other factors were held at means. This function allowed for a more specific and accurate analysis of the effect of individual independent values on medical marijuana approval.

Variables

Control variables

The control variables in this study were quite extensive and are as follows. The Urban variable is an ordinal variable that measures the population of the

respondent's living area. This variable acts as a control within the model to help account for differing opinions based on the urban or rural nature of respondent's orientation.

The Education variable is an ordinal variable measuring the highest levels of education of respondents. This variable has been recoded from 0 (non-high school graduates) to 6 (PHD/Multiple graduate degrees).

The Sex variable is a nominal variable recording a respondent's gender. This variable is recoded to remove non-admissible answers and set male at 0 and female at 1.

The Race variable chronicles the identified race of respondents. This variable is recoded so that each race category (White Black, Asian, and other) corresponds with 1. Subsequently all other races correspond to 0 respectively.

The Age variable measures the age of survey respondents. This ratio level variable ranges from 18 – 99. The variable has been recoded to remove values that do not correspond with an applicable age.

The Income Variable is an ordinal measurement of the income of respondents. This variable was recoded to remove refused responses and to set a minimum of under $15,000 (corresponding with 0) and a maximum of Over $100,000 (corresponding with 5) with measurements separated by increments of $15,000.

In addition the Tea Party support variable is a nominal measurement of whether respondents supported the tea party movement. This variable has been

recoded to establish a scale where non-respondents were removed, and Tea party support was set to 0 with non-tea party support at 1.

The Political party affiliation variable evaluates which political parties respondents supported, this variable has been recoded to set Republican as 0 and Democrat as 1, also all other answers were removed.

Next, Political Philosophy recorded any political philosophies individuals supported. This variable works to help control for respondent's political positions. This variable is a nominal variable and was recoded to remove non-answers and set Conservative as 0, Moderate as 1, and Liberal as 2.

As stated earlier, the surveys used to collect all responses amongst the data sets were identical and used identical language and variable syntax. This allowed for all the independent variables to be consistent between data sets.

Test Variable

The key variable of this study will be the States Diffusion Variable. This variable records the state that each respondent lived in. This variable is a nominal variable so that States without medical marijuana laws and not bordering any state with medical marijuana laws were set at 0, while states with medical marijuana legislation were set to 1. Any state bordering a state with medical marijuana legislation was also set to 1.

Dependent Variable

The dependent variable of this paper is the Medical Marijuana Opinion Variable, which measures the respondent's opinion on allowed use of marijuana for medical purposes. This variable is recoded to an ordinal variable with 0 corresponding with the opinion that marijuana should not be allowed for medical uses and 1 representing the opinion that marijuana use for medical purposes should be legally allowed. Finally, 49 cases where respondents responded with "do not know" were removed. This variable is the measurement by which the other variables are regressed within the logistic regression model.

Again, as the surveys used were identical the medical marijuana approval variable is consistent between data sets.

Analysis

As discussed earlier, the method of analysis employed in this study is a logistic regression using the dichotomous dependent variable of Medical Marijuana Opinion to represent support for MMLs. Using the data mentioned above produces the logistic regression displayed in Figure 1.

Figure 1. Logistic Regression Results

Variables	***DV: Medical Marijuana Support***
State Diffusion	-.75**
	(.29)
Education Level	.06
	(.12)
Gender	.71**
	(.29)
Age (Under 55)	.21
	(.50)

Race (White)	.79*
	(.41)
Race (Asian)	-.24
	(.93)
Income	.25**
	(.11)
Tea Party Support	.15
	(.31)
Party Affiliation	1.14**
	(.38)
Political Philosophy	.43*
	(.24)
Religiosity	-.25**
	(.09)
Urban Environment	.27**
	(.12)

N=538
*p<.10 **p<.05 ***p<.01
Log Likelihood=-186.63

Examining Figure 1 we can establish a great deal of information. Firstly, we can see that the State Diffusion variable is significant at the .05 level as its P-Value is .012. This confirms the diffusion hypothesis that living in a state with MMLs or next to a state with MMLs has an effect on an individual's support of medical marijuana. However, despite the significance of the variable we can also note that the coefficient of the state diffusion variable is -.7511363. This means that for individuals living in or next to a state with medical marijuana laws there would be a decrease in an individual's support for medical marijuana. Prior to running a margins test on our diffusion variable we may note that there is a decrease of 7.6% in an individual's likelihood to support medical marijuana if an individual lives in a state with or bordering a state with medical marijuana legislation. Where individuals with a diffusion value of 0 (not living in a state or bordering a state with

medical marijuana) had a 92.3% likelihood of supporting MMLs and individuals with a diffusion value of 1 (living in a state with or bordering a state with medical marijuana) had an 84.7% likelihood of supporting MMLs. This information is contradictory to the literature and rejects the first hypothesis as the relationship is significant but the direction of the hypothesis is an inverse of the actual relationship in the regression. These findings suggest that further studies should be administered.

Another interesting variable is the Religiosity variable. We find that this variable is also statistically significant with a P value of .008. In addition the results suggest that as an individual's religiosity increases there is a decrease in that individual's support for medical marijuana. Prior to performing a margins test we can see that there is a notable decrease in an individual's likelihood to support MMLs from individuals attending no religious events (93.5%) to individuals attending multiple religious events during a single week (84.5%). These findings confirm our second hypothesis regarding religion having a negative relationship with medical marijuana approval.

The political party affiliation variable and the political philosophy variable are also interesting. Both variables operated on a scale that moved from conservative being 0 to higher scores for more liberal views. In the case of the political party variable, we find the relationship to be very strong with a .003 P-score. Additionally, the coefficient suggests a strong positive relationship between more liberal party affiliation and medical marijuana support. These findings are somewhat mirrored in the political philosophy variable, which has a higher P-score

of .075 making it significant to the 90th percent level. Additionally, the coefficient indicates a positive relationship to medical marijuana approval as well, though again not as strongly as the party variable. These findings support the third hypothesis, as there is a positive relationship between an individual's liberal political position and support for medical marijuana.

Interestingly, despite literature stating otherwise the regression shows a P-score of .529 meaning there is no significant relationship between being under the age of 40 and support for medical marijuana. Additionally, when other age group and interval age variables were substituted into the model the results produced similar P-scores indicating that age, as a whole does not significantly affect an individual's support for medical marijuana. This may be a result of widespread support for medical marijuana, whereas most studies indicate that age is more significant in support for marijuana as a whole. Ultimately, these findings with regard to age reject the first hypothesis, as age is not significant.

Finally, several other variables that were used as basic control variables showed some significant relationships as well. The Urban population variable was shown to be significant to the 95th percent level and had a 12% increase of MML support. In addition gender proved to be significant to the 95th percentile as well, with an 11.1% increase of medical marijuana support between women and men with men supporting more often. Income also proved to be significant to the 95th percent level as well.

In assessing the effectiveness of this logistic regression model, we may note the log likelihood of -186.63358 which is an acceptable number given the number of

cases incorporated to the study (538). Additionally, this model serves to answer confirm or reject all the hypotheses proposed by our literature. The model confirms the 2nd and 3rd hypotheses on Religiosity and Liberal Party Affiliation finding both variables to be significant to the 95th percentile and therefore allowing us to reject any null hypotheses. Furthermore, the regression indicated relationship directions consistent with the literature and hypotheses.

The most interesting find of this study deals with the diffusion hypothesis, which is rejected by the regression. As stated before, the data indicates an inverse relationship to the one posed by the hypothesis, meaning that individuals living in states w/ MMLs or in states bordering states with MMLs are less likely to support medical marijuana than individuals living in states that do not have MMLs or boarders and states with MMLs. Interestingly though, the model does indicate that there is a significant relationship present which is an interesting find. In the case of the state diffusion hypothesis, the direction of the hypothesis is rejected but a relationship is confirmed. Lastly the model also allows us to reject the 1st and 4th hypotheses as well. In the case of the age hypothesis, this is because the model finds that age is not a significant variable. This finding is interesting as it contrasts the information provided by the literature.

Discussion

The results of this study reveal that the variables believed to be significant in determining support for medical marijuana are mixed. The model shows that religiosity and political party affiliation were significant as was suggested in the

literature. However, the regression also rejects the age hypothesis, indicating that age does not affect an individual's support for medical marijuana.

Additionally, the new information added to this study proved to be significant. The model shows that information diffusion does have an affect on individual support for medical marijuana. While the original hypothesis was not supported, this finding's rejection of the literature suggests that further research may be performed in this area.

When other data samples from earlier surveys were tested as well (October 2010 & October 2011), it was found that the state diffusion variable was also significant in these examples as well (to the 90th percentile w/ p-scores within .01 of the 95th percentile). This suggests that despite recent changes in the legality of medical marijuana across the United States, state information diffusion may have been significant long before this study was conducted.

This study raises a few questions, in particular why are the urban population, income, and gender variables significant but do not seem to be included as part of the literature. Also as stated before, the most important question raised by this study revolves around the state diffusion variable and why the hypothesis was rejected. Prior studies have found that a large amount of adolescents have abused marijuana acquired from a medically licensed source (Thurstone, Lieberman, Schmiege, 2011) suggesting that medical marijuana is a significant source for the drug for youth. This could be a possible cause for why individual support within MML states and states adjacent to MML states was lower than individuals not living in or adjacent to a state with MMLs.

Another reason for the direction of the aforementioned relationship may be that the diffusion of information between media markets spanning areas with and without legal medical marijuana highlights the difficulties of implementation and enforcement of marijuana regulation. It is possible that once a state legalizes marijuana for medicinal purposes, neighboring states are witness to the marijuana related struggles of their neighbors. If this is the case and media markets project the negative aspects of medical marijuana legalization, it may explain why overall support for medical marijuana drops for respondents living in or next to states that have legalized medical marijuana.

The results of this study indicate that there is still a great deal of work to be done in finding out what factors make individuals support medical marijuana. The findings show that religiosity and party support are significant in this determination. The model also shows that age is not a significant factor. Finally, this study indicates that information diffusion is a factor that should be considered in future studies into this topic.

Lastly, the findings of this study are beneficial because they help to identify several factors that can be used to determine whether or not people will support medical marijuana. If anything, this model indicates that there are a great many factors that are not accounted for in the literature and that further research should be done in this area.

Appendix 1.

Variable Correlation Table

	Med. Marij.	Urban	Edu.	Gender	age55	RaceW.	RaceA.	Income	TeaParty	Party	Phil.	Relig.	statediff
Med. Marij.	1.00												
Urban	.133	1.00											
Edu.	.079	.132	1.00										
Gender	.088	-.038	.029	1.00									
age 55	.024	.081	.033	.138	1.00								
RaceW.	.019	-.159	.118	.010	-.131	1.00							
RaceA.	-.014	.033	.130	.085	.092	-.304	1.00						
Income	.153	.115	.415	.175	.102	.124	.074	1.00					
TeaParty	.136	.116	.051	-.165	-.058	-.143	.019	.014	1.00				
Party	.225	.216	-.15	-.143	-.078	-.294	.045	-.031	.482	1.00			
Phil.	.212	.161	.125	-.119	-.024	-.127	.036	.034	.425	.604	1.00		
Relig.	-.192	-.045	-.01	-.013	-.113	-.142	.054	-.108	-.118	-.189	-.30	1.00	
statediff	-.074	.099	.106	-.014	-.027	.020	.067	.078	.064	.006	.030	-.061	1.00

Appendix 2.

Descriptive Statistics

Variable	***Mean***	***Standard Deviation***	***Min***	***Max***
Medical-Marijuana	0.863	0.343	0	1
Urban	1.941	1.154	0	4
Education	2.275	1.177	0	4
Gender	0.428	0.495	0	1
age55	0.500	0.500	0	1

RaceWhite	0.813	0.389	0	1
RaceAsian	0.023	0.150	0	1
Income	2.596	1.338	0	4
TeaParty	0.771	0.420	0	1
Party	0.569	0.495	0	1
Philosophy	0.898	0.757	0	2
Religiosity	1.953	1.570	0	4
statediff	0.256	0.436	0	1

Appendix 3.

Logistic Regression Results

Variables	***DV: Medical Marijuana Support***
State Diffusion	-.75**
	(.29)
Education Level	.06
	(.12)
Gender	.71**
	(.29)
Age (Under 55)	.21
	(.50)
Race (White)	.79*
	(.41)
Race (Asian)	-.24
	(.93)
Income	.25**
	(.11)
Tea Party Support	.15
	(.31)
Party Affiliation	1.14**
	(.38)
Political Philosophy	.43
	(.24)
Religiosity	-.25

	(.09)
Urban Environment	.27**
	(.12)

N=538
*p<.10 **p<.05 ***p<.01
Log Likelihood=-186.63

Appendix 4.

Margins Commands

Urban	*Margin*	*Standard Deviation*	*Z-Score*
0	.839	.043	19.44
1	.861	.050	16.89
2	.915	.018	49.90
3	.906	.028	31.60
4	.962	.023	40.71

Gender	*Margin*	*Standard Deviation*	*Z-Score*
0	.877	40.03	0.000
1	.938	59.82	0.000

Party	*Margin*	*Standard Deviation*	*Z-Score*
0	.832	.034	0.000
1	.943	.014	0.000

Philosophy	*Margin*	*Standard Deviation*	*Z-Score*
0	.875	.028	0.000
1	.911	.020	0.000
2	.939	.024	0.000

Religiosity	*Margin*	*Standard Deviation*	*Z-Score*
0	.935	.023	0.000
1	.938	.021	0.000
2	.895	.035	0.000
3	.925	.030	0.000
4	.845	.030	0.000

State Diffusion	*Margin*	*Standard Deviation*	*Z-Score*
0	.923	.014	62.24

1	.847	.034	24.60

References

Birkland, T. (1997) *After Disaster: Agenda Setting, Public Policy, and Focusing Events.* Washington D.C. Georgetown University Press.

Boehmke, W.D., & Witmer, R. (2004) Disentangling Diffusion: The Effects of Social Learning and Economic Competition on State Policy Innovation and Expansion. *Political Research Quarterly,* 57 (1), 39-51

Bouche', V., & Volden, C. (2011). Privatization and the Diffusion of Innovations. *The Journal of Politics, 73*(02), 428-442.

Bowler, Shaun, and Todd Donovan. 2004. "Measuring the Effect of Direct Democracy on State Policy: Not all Initiatives are Created Equal." *State Politics and Policy Quarterly* 4.3 (2004): 345-63.

Cerda, Magdalena., Wall, Melaine M., Keyes, Katherine M., Galea, Sandro., and Hasin, Deborah S. 2012. "Medical Marijuana Laws in 50 States: Investigating the Relationship Between State Legalization of Medical Marijuana and Marijuana Use, Abuse and Dependence." *Drug and Alcohol Dependence 120* 22-27.

Cho, J. (2011). The Geography of Political Communication: Effects of Regional

Variations in Campaign Advertizing on Citizen Communication. *Human Communication Research, 37*(3), 434-462.

Clark, Peter A., Capuzzi, Kevin, and Fick, Cameron. 2011. "Medical Marijuana: Medical Necessity Versus Political Agenda." *Med Sci Monit 17*(12) 249-261.

Cook, F. L., Tyler, T.R., Goetz, E.G, Gordon, M.T., Protess, D., Leff, D.R., & Molotch, H. L. (1983). Media and Agenda Setting: Effects on the Public, Interest Group Leaders, Policy Makers, and Policy. *Public Opinion Quarterly, 47*(1). 16-35.

Clemons , R. S., & McBeth, M. K. 2009. "Public Policy Praxis." (2nd ed.). New York: Pearson Longman.

Donovan, Todd. Mooney, Christopher Z. & Smith, Daniel. 2011. "State & Local Politics: Institutions and Reform" Boston: Wadsworth.

Entman, R.M. (1989) How the Media Affect What People Think: An Information Processing Approach. *Journal of Politics, 51*(2), 347-370.

Eddy, Mark. 2010. "Medical Marijuana: Review and Analysis of Federal and State Policies." *Fas.orc*. CRS, 02 Apr. 2010.

Everson, David H. "The Effects of Initiatives on Voter Turnout: A Comparative State Analysis." *Western Political Quarterly* 34.3 (1981): 415

Ferraiolo, Kathleen. 2009. "Marketing a Policy Idea: Elite Frame Selection and Development in Ballot Initiative Campaigns." *Politics & Policy* 37.2 (2009): 337-68.

Ferraiolo, Kathleen. 2009. "Preserving the Initiative: State Legislative Response to Direct Democracy." *Polity* 39.4 (2007): 425-48.

Fowler, E., & Ridout, T. (2009). Local Television and Newspaper Coverage of Political Advertising. *Political Communications, 26*(2), 119-136.

Garvey T., Yeh B. 2013. "*State Legalization of Recreational Marijuana: Selected Legal Issues*." CRS, 05 Apr. 2013.

Gerber, Elisabeth R. 1996. "Legislative Response to the Threat of Popular Initiatives." *American Journal of Political Science* 40.1 (1996): 99

Goode, Erich. 1969 "Marijuana and the Politics of Reality." *Journals of Heath and Social Behavior* 10.2 (1969): 83-94.

Gorman, Dennis M., Huber Jr., J. Charles. 2007. "Do Medical Cannabis Laws Encourage Cannabis Use?" *International Journal of Drug Policy 18* (2007) 160-167.

Harper, Sam., Strumpf, Erin C. and Kaufman, Jay S. 2012. "Do Medical Marijuana Laws Increase Marijuana Use? Replication Study and Extension." *Annals of Epidemiology 22*(3) 207-212.

Hoffmann, Diane E., J.D, and Ellen Weber, J.D. "Medical Marijuana and the Law." *The New England Journal of Medicine*.

Karch, A. (2007). *Democratic Laboratories: Policy Diffusion Among the American States.* Ann Arbor, MI: University of Michigan Press.

Kingdon, J. (1995). *Agendas, Alternatives, and Public Policies* (2nd ed.). New York: Harpers Collins College Publishers.

Lascher, Edward L. Jr, Michael G. Hagen, and Steven A. Rochlin. "Gun Behind the

Door? Ballot Initiatives, State Policies, and Public Opinion." *Journal of Politics* 58.3 (1996): 760

Lindblom, C. (1977). *Policies and Markets: The World's Political Economic Systems.* New York: Basic Books.

McCombs, M. E., & Shaw, D. L. (1972). The Agenda-Setting Function of Mass Media. *Public Opinion Quarterly, 36*(2), 176-187.

McDonough, James R. 2000. "Marijuana on the Ballot." *Policy Review.* 100(2000): 51-61.

Mendes, Elizabeth. 2010. "New High of 48% of Americans Support Legalizing Marijuana." *Gallup Politics*. http://www.gallup.com/poll/144086/new-high-americans-support-legalizing-marijuana.aspx

Miller, Laura E. 2008. "Voting in Ballot Initiative Elections." ProQuest

Mintrom, Michael, & Vergari, Sara. 1998. "Policy Networks and Innovative Diffusion: The Case of State Educational Reforms." *Journal of Politics* 60: 126-48.

Mooney, Christopher Z. 2001. "Modeling Regional Effects on State Policy Diffusion." *Political Research Quarterly* 54: 103-24.

Pacheco, J. (2012). The Social Contagion Model: Exploring the Role of Public Opinion on the Diffusion of Antismoking Legislation across the American States. *Journal of Politics, 74*, 187-202.

Pacula, Rosalie Liccardo, et al. 2002 "State Medical Marijuana Laws: Understanding the Laws and their Limitations." *Journal of public health policy* 23.4 (2002): 413-39.

Rogers, Everett. 1995. *Diffusion of Innovation,.* 4th ed. New York, NY: Free Press.

Schlozman, Daniel, and Ian Yohai. 2008. "How Initiatives Don't always make Citizens: Ballot Initiatives in the American States, 1978-2004." *Political Behavior* 30.4 (2008): 469-89.

Shipan, C. R., & Volden, C. (2006). Bottom-up Policy Federalism: The Spread of Antismoking Laws from U.S. Cites to States. *American Journal of Political Science, 50*(4), 825-843.

Shipan, C. R., & Volden, C. (2008). The Mechanisms of Policy Diffusion. *American Journal of Political Science, 52*(4).

Smith, Mark A. 2002. "Ballot Initiatives and the Democratic Citizen." *Journal of Politics* 64.3 (2002): 892-903.

Smith, Daniel A., and Caroline J. Tolbert. 2001. "The Initiative to Party: Partisanship and Ballot Initiatives in California." *Party Politics* 7.6 (2001): 739-57.

Thurstone, Christian., Lieberman, Shane A., Schmiege, Sarah J. 2011. "Medical Marijuana Diversion and Associated Problems in Adolescent Substance Treatment." *Drug and Alcohol Dependence 118* 489-492.

Tolbert, Caroline J., and Daniel A. Smith. 2005. "The Educative Effects of Ballot Initiatives on Voter Turnout." *American Politics Research* 33.2 (2005): 283-309.

Tolbert, Caroline J., John A. Grummel, and Daniel A. Smith. "The Effects of Ballot Initiatives on Voter Turnout in the American States." *American Politics Research* 29.6 (2001): 625-48.

Walker, Jack L. 1969. "The diffusion of Innovations Among the American States." *American Political Science Review* 63: 880-99.

Wall, Melaine M., Poh, Ernest., Cerda, Magdalena., Keyes, Katherine M., Galea, Sandro., and Hasin, Deborah S. 2011. "Adolescent Marijuana use from 2002 to 2008: Higher in States with Medical Marijuana Laws, Causes Still Unclear." *Annals of Epidemiology 21*(9). 714-716.