

What is the Impact of Marijuana Legalization? Testing for Differences in Marijuana Cognitions as a Function of Marijuana Policies

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Background

- Marijuana is the most commonly used illicit drug in the U.S., with a 2018 national report showing 1 in 9 American adults (11.2% of the population) used in the past year.¹
- Marijuana can be used in some states to treat cancer and chronic pain, but more research is needed to determine its effects among healthy individuals.
- Potential negative side effects include addiction (1 in 10 users), attention and memory deficits, and feelings of anxiety.²
- Ten states plus DC have passed laws legalizing use of marijuana for recreational purposes since 2012.
- The Theory of Planned Behavior (TPB)³ and the Prototype Willingness Model (PWM)⁴ are two social psychological models that can explain how changes in legislation can influence risk cognitions and, in turn, behavior.
- According to TPB, behavior is influenced by behavioral intentions and intentions are predicted, in turn, by attitudes and norms.
- According to PWM behavior is influenced by two pathways: an intentional pathway and a socially reactive one. The intentional pathway generally reflects TPB constructs. The socially-reactive pathway describes that attitudes, norms, and prototypes influence willingness which, in turn, influences behavior.
- Prior work applying the TPB³ and PWM⁴ frameworks measured marijuana related cognitions of DC residents prior to recreational legislation and after recreational legislation. This study found that residents who were moderate to heavy users of marijuana reported more favorable perceived norms around marijuana after recreational marijuana legislation was passed⁵
- One gap in the existing literature is that studies testing for the effects of legislation on marijuana cognitions and behavior have focused only on a subset of states or focused primarily on adolescents or young adults^{5,6}
- The present study aims to extend the existing literature by testing whether marijuana cognitions of US adults differ across states that have different marijuana laws.

Study Objectives

1. Test if perceived injunctive norms vary as a function of whether or not state of residence has no marijuana laws (NML), medical marijuana laws (MML) or recreational marijuana laws (RML)
2. Test whether perceived descriptive norms vary based on legal status of marijuana in state of residence (MML, RML, or NML)
3. Test whether attitudes regarding marijuana vary based on legal status in state of residence (MML, RML, or NML)

Participants and Recruitment

The 2012 American Community Survey was used as a sampling frame from which to select a matched sample. Participants ($N = 3150$; 41.1% Female; $M_{age} = 54.57$, $SD = 16.25$) matched on age, race, gender, education, marital status, number of children under 18 years, family incomes, employment status, citizenship, state and metro area. At the time these data were collected 9 states and DC had legalized marijuana for recreational purposes. The data presented in the current research comes from wave 3, which took place in 2018 prior to the midterms ($N=3150$).

Measures

- Status of Marijuana.** Three dummy variables were created corresponding to the status of marijuana legalization prior to 2018 midterm elections, NML ($N = 19$ states), MML ($N = 22$ states), and RML ($N = 10$ states).
- Injunctive norms.** Injunctive norms were assessed by asking participants to rate how acceptable it is for adults in their state to use marijuana for recreational purposes on a scale ranging from 1 (*very unacceptable*) to 5 (*very acceptable*).
- Descriptive norms.** Descriptive norms were assessed by asking participants to estimate the percentage of adults in their state of residence that use marijuana for recreational purposes ranging from 0 to 100.
- Attitudes.** Attitudes were assessed with 1 item that asked participants to rate how acceptable it is to use marijuana for recreational purposes on a response scale ranging from 1 (*very unacceptable*) to 5 (*very acceptable*).
- Political ideology.** Participants rated their political ideology on a scale ranging from 1 (*very liberal*) to 5 (*very conservative*).
- Demographics.** Participants self reported age and gender (0 = *Male*, 1 = *Female*).

Results

Correlations and descriptive statistics for major study variables are shown in Table 1.

	1	2	3	4	5	6
1. Injunc	-					
2. Descri	.251**	-				
3. Attitude	.509**	.220**	-			
4. Age	-.107**	-.089**	-.213**	-		
5. Gender	-.015	.168**	-.030	-.040	-	
6. Ideology	-.248**	-.123**	-.453**	.208**	-.094**	-
<i>N</i>	2319	2314	2321	2321	2321	2228
<i>M</i>	3.25	45.77	3.11	54.57	0.56	3.05
<i>SD</i>	1.27	22.20	1.52	16.25	0.50	1.27

Note: Injunc = Injunctive norms; Descri = Descriptive Norms **>.01. *>.05

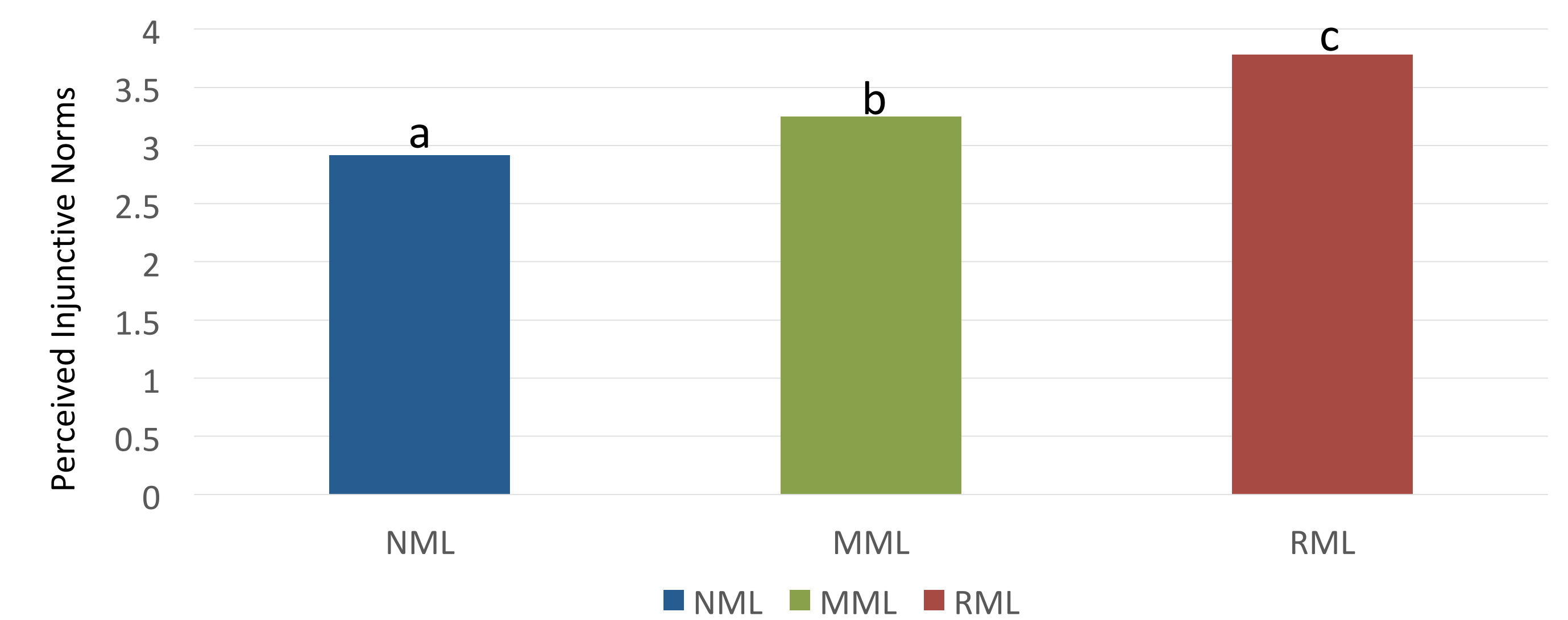
Study objective 1. Results of an ANCOVA showed that injunctive norms differed as a function of legal status ($F_{2,2215} = 71.33$, $p < .01$) even after controlling for age ($\beta = -.01$, $p < .01$) gender ($\beta = -.10$, $p < .05$), and ideology ($\beta = -.21$, $p < .01$). These differences are shown in Figure 1.

Study objective 2. Results of an ANCOVA also showed that Descriptive Norms also differed as a function of legal status ($F_{2,2211} = 4.22$, $p < .05$) even after controlling for age ($\beta = -.08$, $p < .01$), gender ($\beta = 6.77$, $p < .01$), and ideology ($\beta = -1.53$, $p < .01$).

Study objective 3. Results of an ANCOVA showed that attitudes in states with NML ($M = 3.03$, $SE = .05$), MML ($M = 3.07$, $SE = .04$), and RML ($M = 3.21$, $SE = .06$) were statistically equivalent ($F_{2,2217} = 2.66$, $p > .05$).

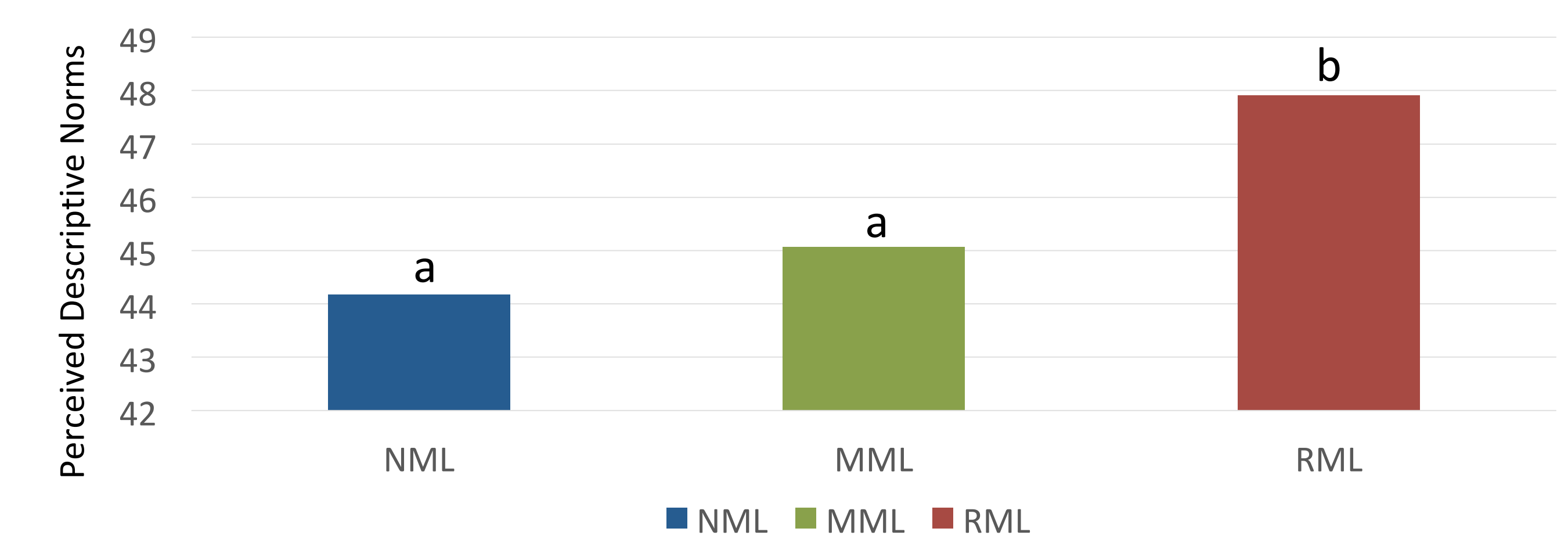
Results Continued

Figure 1



Note: Bars sharing the same letter are *not* statistically significant.

Figure 2



Note: Bars sharing the same letter are *not* statistically significant.

Discussion

Results show that, in general, residents in states with more liberal marijuana laws report more favorable norms than residents in states where marijuana is illegal. This is true even after controlling for political ideology. This suggests that legal status of marijuana may play a role in shaping perceived social norms, which in turn could have an impact on decisions to use. Given the potential negative consequences of marijuana use, public health officials should consider this potential impact in states where marijuana laws are changing.

Surprisingly there were no differences in attitudes among residents in states with more liberal marijuana laws compared to those in states where marijuana is illegal. This finding, when viewed in conjunction with findings from norms implies that regulation likely affects cognitions differently.

Our study is limited given its cross-sectional nature. Given that measures were assessed at only one timepoint, causal conclusions cannot be drawn. This study still adds to the literature by providing information from a nationally representative sample spanning states of all legislation types.

References

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