

UNCOVERING THE TRUTH ABOUT MARIJUANA— A LITTLE WEED NEVER HURT ANYONE

ENG W270: FIRST PLACE

Kora Martin

Abstract

The debate surrounding marijuana legalization has intensified as individual states challenge federal laws, making research on marijuana's economic, social, and health impacts even more necessary. This paper reviews literature and survey data to assess the impact of legalization on these fronts. Economic analyses indicate increased tax revenue, job creation, and savings in criminal justice expenditures. However, research on social and public health impacts remains inconclusive due to the unavailability of data. Nevertheless, a survey was distributed to Indiana residents to gain insight into marijuana's social and public health impacts, revealing that public opinion diverges from scholarly concerns. Survey data indicates that marijuana may be much less harmful than suggested by academics, and more certainly, marijuana use, and pro-legalization attitudes are on the rise. Overall, the evidence suggests that marijuana legalization is inevitable and could bring economic benefits, but future research should focus on addressing the social implications of marijuana legalization.

Marijuana, currently an illegal drug under federal law, has become increasingly popular in the last few decades. As its presence casts a more enormous shadow over society, debates over marijuana's deserved legal status frequent headlines. As a result of marijuana's

increasing popularity, individual states started experimenting with loosening restrictions on marijuana, beginning with the implementation of medical marijuana laws in the late 90s to the early 2000s. In 2014, however, Colorado became the first state to legalize recreational marijuana, which started a booming trend that many U.S. states were eager to get on board with. Despite the growing trend of legalization throughout the United States, some states and the federal government as a whole continue to hold out against legalization, even though the benefits clearly outweigh the consequences; thus, our nation remains divided on this issue.

In hopes of finally settling this debate, not only have I been conducting research over the last eight weeks on the impacts of legalization, but I have also distributed a survey to residents of Indiana—an unlegalized state—to further test the strength of research and understand how it aligns with the experiences of the public. Overall, peer-reviewed research reveals that the impact of legalization on the economy is supported by the most empirical evidence, suggesting that legalization can, and already has, positively impact the economy by increasing tax revenue, inspiring employment growth and opportunities, and reducing criminal justice expenditures. On the other hand, research into the impacts of legalization on social and public health has failed to offer much evidence beyond theoretical, suggesting that the unavailability of data persists. Nevertheless, the survey set out to discover answers to this area of limited data on the social impacts of marijuana and ultimately found that the experiences of the public do not fully align with the everyday concerns of researchers in this sector. For the sake of this argument, however, this paper will operate on the assumption that researchers' findings carry significant weight. Still, even with this assumption, it is evident that marijuana deserves to break free from prohibition and join alcohol as a nationally legalized substance.

Literature Review

A review of the literature first reveals that no source identifies an issue with the current economy; instead, each source discusses how the economy can or cannot see advancement following marijuana legalization. According to the authors of “The Effect of State Marijuana Legalizations: 2021 Update,” data compiled and analyzed from various legalized states, including Colorado and Washington, led to inconclusive results, suggesting that the social and public health impacts of marijuana legalization cannot be entirely determined yet; however, “the notable exception is tax revenue, which has exceeded some expectations” (Dills et al., 2021, p. 11). To expand on this, discussing legalization within the Tenth District states, the authors of “Marijuana Industry Has Boosted Economic Activity in the Tenth Federal Reserve District” reported that “this expansion has increased... tax revenues and created jobs” (Felix & Shampine, 2022, p.1). So far, the sources touch on tax revenue and employment economic benefits. Still, to further contribute to this shared perspective, the author of “The Economic Impacts of Marijuana Legalization” relayed evidence from Harvard economist Jeffery Miron, writing that “...legalization will reduce the need for prosecutorial, judicial, correctional, and police resource spending by approximately \$7.7 billion – \$13.7 billion per year” (Miron, 2010, as cited by Evans, 2013, p. 2). In summary, the sources highlight that from an economic standpoint, each state’s economy stands to experience advancement through marijuana-generated tax revenue, employment growth, and extensive cost savings from marijuana-related criminal justice expenditures, yet not all states are seeking this economic opportunity.

As previously mentioned, in 2014, the states collectively saw how marijuana legalization economically benefited Colorado—the first state to legalize the recreational use and sale of marijuana, which in turn has caused more and more states to undergo legalization to

some extent. In the article “The Legalization of Marijuana: An Analysis into the Economic Impacts on Colorado’s Economy – Will future states choose to follow such policies?,” the authors reported that as of 2015, “23 US states legally enable the use of medical marijuana” (Thorpe & Lean, 2015, p. 29); to which Dills et al. (2021) responded that from 2015 to 2021, 10 more states have implemented medical marijuana laws, for a total of 33 states thus far (p. 4). As for policy changes enacting recreational marijuana laws, the author of “The Effects of the Legalization of Recreational Marijuana” wrote that “as of 2018 there have been eight states...[to] legalize the recreational use of Marijuana: Colorado, Washington, Nevada, California, Oregon, Alaska, Maine, and Massachusetts” (Paul, 2018, p. 2). A newer source revealed that three additional states—Vermont, Michigan, and Illinois—have joined the movement as of 2021 (Dills et al., 2021, p. 4). On top of the states that have already undergone legalization of some form, there are “as of November 2020...23 states with bills to legalize marijuana, 14 with bills to decriminalize marijuana, and 12 with bills to create medical marijuana programs” (Dills et al., 2021, p. 4). It is clear that there is a rising trend of legalization caused by Colorado’s first successful experiment with recreational marijuana legalization, in which the economic benefits of legalization were first unveiled.

Tax Revenue

As a previous source mentioned earlier, marijuana tax revenue has exceeded expectations; moreover, this same source and Paul (2018) alike reported that “in 2015, the state [Colorado] generated a total of \$135 million in recreational marijuana revenue” (Dills et al., 2021, p. 10). Moreover, total tax revenue in Colorado from 2014 to 2016 exceeded \$996 million (Paul, 2018, p. 5). In 2021, Colorado marijuana sales totaled “...more than \$2.2 billion,” and revenue totaled “...more than \$423 million” (Felix & Shampine, 2022, p. 30). Dills et al.

(2021), however, offer a dissenting perspective, noting that “economic... outcomes are unlikely to be significantly affected by marijuana legalization, simply because marijuana commerce is a small part of the overall economy” (p. 10), which agrees with evidence brought up by Felix and Shampine (2022), stating that even though Colorado “has the highest revenues, marijuana revenue made up just 2.3 percent of state tax revenue in 2021” (p. 3). A source mentioned above revealed that Oklahoma, Washington, and other smaller states are set to bring in revenue within the ranges of \$50-\$150 million, whereas California, a much larger state, is on the path to generating upwards of \$100 billion in annual tax revenue (Paul, 2018, pp. 5-6). Nevertheless, all sources agree that the marijuana industry has brought in and will continue to bring in millions to billions of dollars in revenue, which can assuredly advance the states’ economies.

Employment

While Felix and Shampine (2022) noted that the share of employment stemming from the marijuana industry is small within states, the authors also reported that from 2014 to 2017, people in Colorado benefited from the 280,000 jobs created by legalization, further indicating that “employment in the marijuana sector may have contributed up to 13.6 percent of the state’s employment growth” (p. 2). On the other hand, a second source offers contrasting evidence, writing that Colorado has created 23,407 jobs as of 2018 that are specific to “dispensaries, manufacturing plants, grow operations and governmental branches” (Paul, 2018, pp. 11-12). Continuing on this discussion, Dills et al. (2021) shed light on popular belief, explaining that “marijuana production and commerce do employ many thousands of people, but the employment gains seen...are still modest compared with the overall size of each states’ workforce” (p. 10). Despite their differences, the sources all contend that some employment growth is

expected, and has been seen, and although the overall contribution of marijuana industry jobs is only a fraction of total employment, it will still undoubtedly benefit the economy and create opportunities. Moreover, with the economy possibly heading toward a recession, marijuana legalization might just be what the doctor prescribed to nurse the economy back to health.

Criminal Justice Expenditures

Authors Thorpe and Lean (2015) summarized the total criminal justice expenditures related to marijuana prohibition for the year preceding legalization in Colorado, suggesting that “\$40 million was exhausted on prohibition;” therefore, marijuana-related savings post-legalization “will rise toward the long run savings level of \$40 million” (p. 33). In agreement, an additional two sources, Evans (2013) and Paul (2018), offered up previously mentioned evidence from Miron (a Harvard economist) suggesting that the combined states’ criminal justice expenditure savings are estimated to lie between \$7.7 billion and \$13.7 billion (p. 2; p. 6). Notably, the projected estimate by Thorpe and Lean (2015) only accounts for Colorado, whereas the considerably larger estimate accounts for all 50 states. Furthermore, Dills et al. (2021) explained that any differences in estimates is attributed to the minimal amount of data available on this economic front, but suggested that more time will bring more accurate answers (p. 10). Overall, the majority of sources that discuss expenditure savings conclude that some extent of savings is expected following legalization, which will allow the states to use these financial savings in more vital ways.

In this next section of the review of the literature discussing the social and public health impacts of marijuana, the majority of peer-reviewed sources identify the main issue with marijuana legalization as being that the scientific community is still unsure of the adverse

social impacts of marijuana. Therefore, many researchers and policy-makers are wary of making it available to the public. More specifically, there is limited information concerning the implications of marijuana legalization on patterns of use, health and safety, working society, and public opinions, further reinforcing the more significant issue of the unavailability of data—which all sources do agree on. Based on current research in this area, however, marijuana tends to be more frequently viewed in a negative light by academics, yet the media more regularly portrays marijuana in a positive light. A contributing source from earlier generalized common counterarguments against legalization: “Critics argue that legalization spurs marijuana and other drug or alcohol use...harms public health, and lowers teen educational achievement,” all of which are arguments with merit, just not enough to sway public opinion (Dills et al., 2021, p. 1).

Another primary research concern is that legalizing marijuana will create a dangerous precedent, opening a window for truly dangerous drugs to worm their way into legalization; however, the truth is that legalizing alcohol has already created a dangerous precedent and arguably a much more dangerous precedent than marijuana could ever set. Even though there is not enough confirmatory research on marijuana’s health impacts, it can be asserted that alcohol outranks marijuana on the hazardous scale as soon-to-be seen; therefore, no additional conclusions can be made other than that marijuana is no more dangerous than alcohol, and rightfully deserves to be legalized.

Patterns of Use

The abundance of research on patterns of marijuana use suggests that marijuana is most likely to influence the teenage and young adult population negatively; however, the total percentage of the population that uses marijuana is also on the rise. As previously

mentioned, Dills et al. (2021) wrote that critics argue legalization “lowers teen educational achievement” (p.1). In “Is Marijuana Good for Public Health?”, Ruth Graham (2014) relayed research from New Zealand that supports this counterargument, suggesting that “marijuana users who start smoking when they are young demonstrate irreversible IQ losses” —a finding that compliments studies and evidence discussed by Dills et al. (p. 11). On the contrary, Graham also discussed research from a specialist on marijuana policy, D. Mark Anderson (2022), who, in his article titled “The Public Health Effects of Legalizing Marijuana,” summarized his findings, concluding that “legalization does not promote marijuana use among teenagers” (p. 2). Anderson and Rees (2022) then went on to reveal that there is evidence for increased marijuana use in young adults, yet as their use of marijuana increases, their use of alcohol is likely to decrease—referring to the commonly discussed substitutive property of marijuana in replacing alcohol (p. 2). Further supporting the original counterargument, a review titled “Cannabis Unveiled: An Exploration of Marijuana’s History, Active Compounds, Effects, Benefit, and Risks on Human Health” conveyed the findings that “people who started using cannabis before the age of 17 were less likely to complete secondary school or pursue higher education,” which is undoubtedly a result that warrants concern (Hasan, 2023, p. 6).

In a different review, however, Chiu et al (2021) reported that meta-analysis studies showed no increase in adolescent marijuana use following medical marijuana legalization; yet, following recreational marijuana legalization, a statistically insignificant increase in adolescent marijuana use was observed (p. 7). This same source highlighted the demographic variation among marijuana users, writing that “cannabis use has increased in the U.S adult sample, regardless of gender, age, race/ethnicity, income, education, marital status, and geographic region” (Chiu et al., 2021, p. 7); however, Graham (2014) offered

contradictory evidence, reporting that “the typical marijuana user is not the well-off, weekend-smoking professional that legalization advocates sometimes prefer to highlight,” further stressing that only a rough 15% of marijuana users have a college degree (p. 4). Furthermore, Hasan (2023) contended that legalization is most likely not to blame for the rising rates of use; instead, marijuana use increases as the perception of risk decreases, and given the increase in positive press on marijuana over recent years, “more than 39 million Americans reported having used marijuana,” which is roughly 12% of the population, just in 2016-2017 (p. 4). This is a significant increase in users as compared to the early 2000s. Dills et al. (2021) came to a similar conclusion after examining longitudinal data on patterns of use in legalized states, pre- and post-legalization, writing that “legalizing states display higher and increasing rates of use prevalence, but these patterns existed prior to legalization” (p. 5). As one can see just from this sample of research, there is a large spread of theories, findings, and conclusions about legalization’s impact on patterns of marijuana use, yet unlike research on legalization’s economic impact, we are unable to draw a firm conclusion.

Health & Working Society

In addressing marijuana’s impact on health and the working society, research continues to be multidirectional, resulting in two common yet contradictory conclusions: marijuana is an asset to public health or a curse. Starting strong, both Chiu et al. (2021) and Hasan (2023) went into great depth on the array of possible health consequences that may occur with regular marijuana use. Between these two sources, around 20 potential health risks were listed, including cardiovascular diseases, oxidative stress, arrhythmias, hyperemesis syndromes, mental disorders, psychoses, depression, suicide, cannabis use disorder, addiction, and cancer—although other

evidence suggests marijuana is not a carcinogen (Chiu et al., 2021, p. 7; Hasan, 2023, pp. 4-5). On the other hand, however, Doug Sellman (2020), the author of "Alcohol is more harmful than cannabis" offered a new perspective on the issue. Sellman reported that on nine out of the 13 total aspects he considered and compared, he found that alcohol is more harmful than marijuana. These nine aspects include the risk of death from overdose and the risk of death from severe withdrawal, in which the possibility of these risks happening is virtually zero for marijuana use, as compared to relatively high for alcohol use; the risk of aggressiveness during intoxication, the risk of liver and other organ damage, and the risk of fetal brain damage, in which the possibility of these risks happening is low for marijuana use, as compared to moderately high, high, and definitely high for alcohol use; the risk of brain damage from chronic heavy use, the risk of causing major depression, and the risk of harm while driving intoxicated, in which the possibility of these risks occurring is moderate or possible for marijuana use, as compared to high or definite for alcohol use (p. 8, emphases added).

Additionally, Sellman noted that no evidence suggests that marijuana is a carcinogen or causes cancer (whereas alcohol is and does), later on, writing that "ethanol consumption is implicated in the causation of over 200 different medical conditions, whereas delta9-THC appears relatively non-toxic to the human body and has no such medical linkages" (p. 9). On a prominent note, 200 identified health risks significantly surpass the 20 potential health risks earlier afforded to marijuana, further showing marijuana's harmlessness in comparison to alcohol. Offering a similar perspective to Sellman, Hasan (2023) also discussed the various ways marijuana can improve health, starting with its ancient uses of treating "malaria, poor memory, gout, and rheumatism" and then moving into its more recent early medical uses to "alleviate symptoms such as arthritis, nausea, and labor pains"

(pp. 1-2). As for marijuana's current health uses/treatments, Hasan lists the following: migraines, Parkinson's disease, multiple sclerosis, fibromyalgia, irritable bowel syndrome, PTSD, anxiety, psychiatric disorders, chronic pain, obesity, opioid addiction, liver disease, and more, which only account for marijuana's medical uses; whereas, alcohol, on the other hand, is not medically used to treat anything (pp. 3-7). This same source, along with many others, reported studies on how marijuana use affects the working society, showing that "marijuana use was linked to lower job performance and higher absenteeism," but the same could just as easily be said about alcohol (Hasan, 2023, p. 7). Nevertheless, as it is continuously seen in this area of research on marijuana, there is plenty of dissenting evidence and scholarly opinions on this finding, and many more alike. As a result, no firm conclusions are yet available.

Public Opinion

In the social and public health sector, the majority of research on legalization's impact on public opinion seems to be headed towards a shared conclusion, suggesting that the media and modernization may have been initially responsible for the shift in public opinion on marijuana over recent years; however, the growing spread of legalization does presently factor in. In addressing recent public attitudes on legalization, Anderson & Rees (2022) wrote, "According to recent public opinion polls, two out of three Americans favor the legalization of marijuana" (p. 1). Chiu et al. (2021) shared the specific transition periods in public opinion and the reasons behind them, explaining that in the early 1970s, only 12% of the public supported recreational marijuana legalization, which according to studies, is mainly due to the media's negative portrayal of marijuana during this time; that is until the 2000s, when the media transitioned coverage of marijuana into a neutral tone and started discussing the medical

benefits of marijuana around 2010, resulting in the growing support for legalization (p. 3).

From 2010 to now, the media has portrayed marijuana in a more positive light, and in 2016, 60% of the public supported recreational marijuana legalization (Chiu et al., 2021, p. 3). Given this evidence, it is clearly seen that there is a positive relationship between the media's framing of marijuana and the rise in pro-legalization attitudes. Further aligning with this conclusion, Dills et al. (2021) summarized their findings of the data, reporting that the high and increasing rates of marijuana use prior to legalization... might provide evidence for a cultural explanation behind the recent swell of legalizations: as marijuana becomes more commonplace and less stigmatized, residents and legislators become less opposed to legalization (p. 6). A contradictory finding has yet to be introduced throughout the research reviewed on how legalization impacts public opinion. Instead, researchers can agree that the media and modernization are the causes behind the pro-legalization shift in public opinion.

Research Methodology

Given that the issue of the unavailability of data remains within research on the social and public health impacts of marijuana, the survey was distributed to find more conclusive answers and gather data on patterns of marijuana use, marijuana's social and health impacts, and public opinions on marijuana use and legalization. The significant findings from the data offer up trends in patterns of use and other valuable insights, suggesting that the impacts of marijuana use on health and the working society may not be as concerning as previous research indicates. Moreover, as marijuana's presence remains ever-growing in Indiana, so does the majority opinion of residents who would welcome legalization with open arms.

The process of composing and distributing the survey was highly detailed to obtain the most relevant and representative sample of data. Before drawing up questions, each survey question needed to be directed at the specific goal of learning how individuals' experience with marijuana aligns with previous marijuana research. Each question is built on the foundation of previous research and seeks to gain data on how common issues or conclusions seen in other research correlate with the experiences of Indiana residents. After peer review and critique, the survey was ready for distribution. Limiting the survey to Indiana residents was a strategic choice that allowed the data to be uninfluenced by the open legal availability of marijuana, whereas distributing the survey across legalized states may have affected the results. To achieve a representative sample, the survey was first sent to several friends and family members residing in Indiana via social media platforms. They were then asked to send the survey to five individuals from their hometowns. Following distribution, the target audience was set to reach 62 respondents across the state. After the survey closed, however, a total of 50 responses were recorded, making the completion rate of the survey roughly 81%. Furthermore, distributing the survey via social media allowed for reaching a broader audience, and successfully so; confirmation from helpful friends and family members that individuals in their hometowns completed the survey led to feedback from the following 12 cities and towns across Indiana: Indianapolis, Rochester, Bloomington, Ellettsville, Bedford, Fort Wayne, Evansville, Fishers, South Bend, Kokomo, Noblesville, and Hammond. Although the survey successfully reached individuals of various ages and ethnicities, more variation would have been ideal in achieving a truly representative sample of data. Nevertheless, the survey results still prove to be substantial and interesting compared with other research.

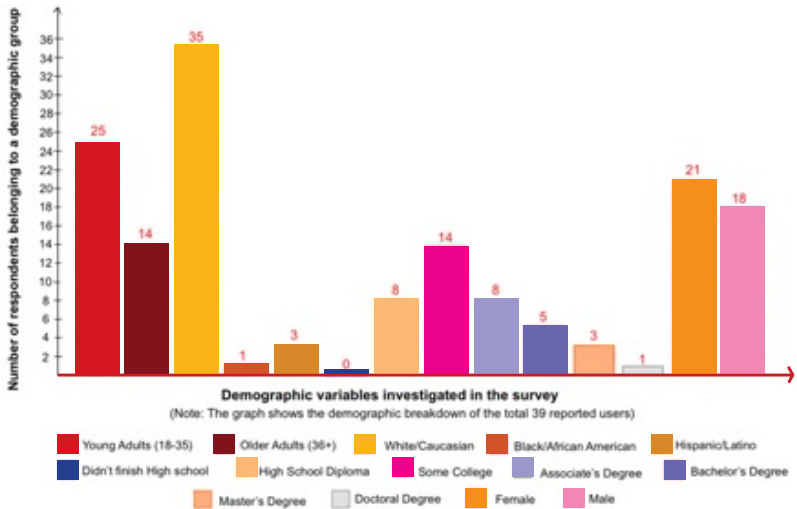
Results

In addressing respondents' patterns of marijuana use, the demographics of marijuana users were expected to vary immensely, as suggested earlier by Chiu et al. (2021), just as significantly more younger adults were expected to report current marijuana use as compared to older adults. In alignment with most research, the data reflects these expected results. Firstly, when 50 respondents were asked if they had ever used marijuana, a surprising 78% answered yes, compared to the 22% who had never used marijuana. The observed percentage was expected to be slightly lower, given that marijuana is still illegal in Indiana, yet it is clear that this percentage speaks to the rising rates of use, legal or not. Upon comparing the 78% of respondents who reported previous or current marijuana use to their demographic information, it is evident that marijuana does not discriminate. Out of the 39 reported marijuana users in the survey, some were as young as 18 and as old as 73, some were White, Black, or Latino, and some reported having education degrees as borderline as a High School Diploma to as high as a Master's or Doctoral degree. It is worth noting that only about 20% have a high school degree, whereas about 80% have, or are pursuing, higher education degrees—a result that conflicts with research from Graham (2014).

For a more visual understanding, Figure 1 below shows the demographic breakdown of the 39 respondents who reported marijuana use, and noticeably, there is widespread diversity, supporting the findings of Chiu et al. (2021). Furthermore, breaking up the data into age categories reveals that 32 young adults (operationally defined as ages 18-35) and 18 older adults (operationally defined as ages 36+) took the survey. Comparing the data of young adults with older adults shows that young adults are many times more likely to use marijuana, and to do so more heavily than older adults; notably, however, the majority of older adults who have used marijuana reported degrees of previous use in young adulthood. According to

the survey data, 25 out of 32 young adults reported using marijuana before, and 14 out of 18 older adults reported using marijuana before, which is almost perfectly a 78% usage rate for both young and older adults.

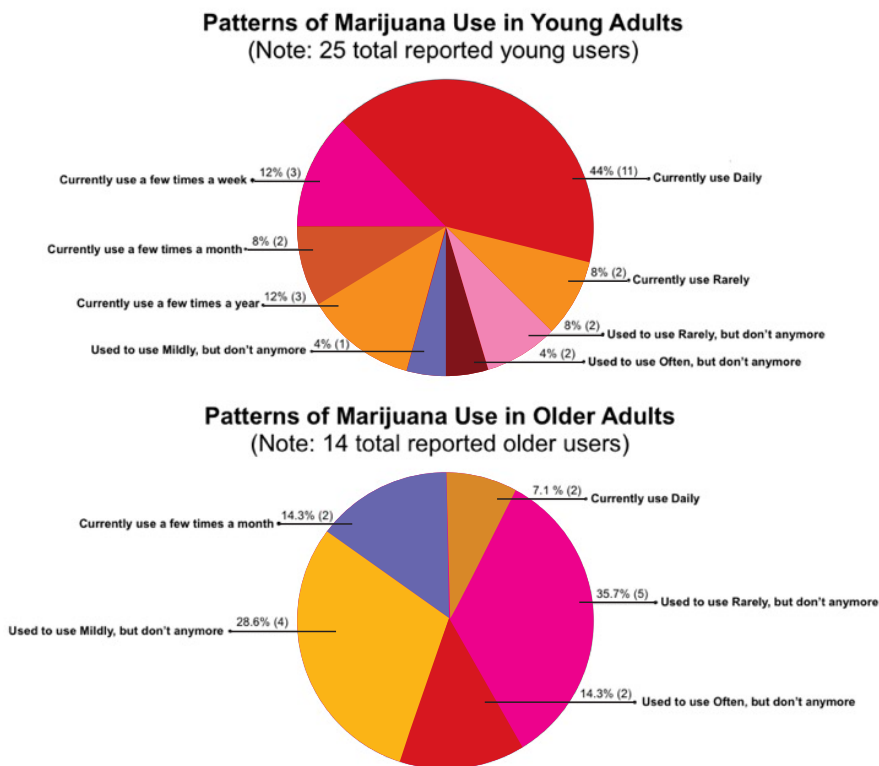
Figure 1. Demographic breakdown of Marijuana users



As seen in Figure 2 below, the difference between these groups, however, is that out of the 25 reported young marijuana users, only four answered that they used to use marijuana to some degree but do not anymore, compared to the remaining 21 individuals who report current marijuana use to some degree; whereas out of the 14 reported older marijuana users, 11 individuals answered that they used to use marijuana to some degree but do not anymore, compared to the three older individuals who reported some extent of current marijuana use. These findings further reinforce the conclusion that marijuana’s influence is greatest among the teenage and young adult population. To further show how patterns of marijuana use are more

prevalent in young adulthood, a 74% majority of the 39 respondents who have answered yes to previous use state that their usage rate was the highest at the ages of 16-22 years old—the prime years of young adulthood. Given this data, it is understood that marijuana maintains a significant presence in Indiana, regardless of its illegality. Although a wide variety of individuals use marijuana, its usage is the greatest among the teenage and younger adult population—as suggested by the better half of researchers.

Figure 2. Patterns of Marijuana use in young adults compared to patterns of use in older adults



In an attempt to explore the impacts of marijuana use on one's health and responsibilities, an exciting and unexpected result

arises. When respondents were asked to reflect on their experiences to determine if marijuana use has ever had an impact on their health, a decent proportion of individuals were expected to report negative health impacts, which aligns with several predictions and theories in previous research. However, unexpectedly, out of 48 individuals who answered the question, only three individuals (roughly 6%) reported negative health impacts. The resulting data concludes that 50% of individuals believe marijuana has had no impact on their health, roughly 19% are unsure of any health impact, and 25% of individuals believe marijuana has had a positive impact on their health. Although this data might classify as circumstantial or theoretical, given the possibility that health impacts are occurring unknowingly, these results are still substantial to current research on marijuana's perceived impacts on health. These results also somewhat contradict earlier evidence that regular marijuana use significantly increases the likelihood of health risks occurring.

Additionally, previous research is commonly concerned with how marijuana may impact one's responsibilities and performance in working society, so respondents were asked, based on their experience, if marijuana use has ever interfered with their daily responsibilities (including parental, professional (vocational), and educational responsibilities). Based on evidence and concerns from previous research, the results were expected to show a majority of individuals who identify some degree of interference. Shockingly, however, out of the 47 responses to this question, roughly 71% of respondents say marijuana has never interfered with their responsibilities. In comparison, roughly 21% of respondents say marijuana rarely interferes with their responsibilities, and roughly 2% of respondents say marijuana sometimes interferes with their responsibilities. The remainder state that they are unsure of any interference. Despite common belief or evidence that marijuana use leads to lower job performance, some respondents have disclosed that

they discontinued their marijuana use to maximize job performance, demonstrating that regular marijuana-using individuals are no less capable of making responsible decisions than non-marijuana-using individuals.

Moreover, the data reviewed earlier on patterns of marijuana use might also provide longitudinal evidence indicating that marijuana may be much less addictive than recent research suggests. A good fraction of older and younger adults who reported previously mild or frequent marijuana use in their younger years also state that they do not use marijuana anymore, which can lead to the inference that these individuals were able to discontinue their use of marijuana easily; therefore, providing evidence that the substance may be considerably less addictive than most others, such as alcohol and nicotine. On the other hand, a total of 24% of all respondents report daily marijuana use, which could, at the very least, act as evidence that marijuana may be as addictive as research theorizes or lead to substance dependence or cannabis use disorder. In summary, the survey data revealed some unexpected findings that contradict those commonly found in research. At the same time, these findings also introduce a new perspective and a reformed understanding of marijuana.

Given that marijuana legalization is becoming more popular, and research on legalization is growing, the survey set out to gauge the public opinions of Indiana residents on reasons behind marijuana use and legalization; in doing so, a few unsurprising conclusions surfaced, yet an unexpected conclusion was also observed. Out of 49 respondents who provided feedback to the question asking how they would be inclined to vote if Indiana were to hold a ballot vote for legalizing recreational marijuana, 76% voted in favor of legalization. This is an unsurprising result given that research showed that the transition in media coverage and the spread of legalization throughout the country has caused a modern shift in public opinion concerning marijuana. However, the percentage of pro-legalization attitudes

observed is still greater than the expected 2/3rds or 66.6% seen in recent polls by Anderson & Rees (2022).

What is surprising, however, is that only a rough 2% of respondents (or one individual) selected that they would vote against legalization, especially when taking into account that 22% of respondents have never used marijuana. Instead of voting no, many non-users selected that they have no preference, would not vote, or would even vote in favor of legalization, which was certainly unexpected, given that hot or controversial debates, such as marijuana, often warrant individuals to take one side or the other. But notably, this is not the case for marijuana.

To further gauge public opinions on marijuana and its uses, respondents were asked to briefly describe why or why they do not use marijuana. A common theme emerged after breaking respondents' answers up between those who answer why and those who answer why not. Reasons listed for why respondents use marijuana commonly include recreation (to enjoy it with others), relaxation, stress relief, pain relief, sleep aid, or anxiety relief. In contrast, reasons listed for why respondents do not use marijuana commonly include the illegality of the substance, no desire/interest, religion, job interference, drug testing implications, perceptions of harm to one's health, or because they were never educated on marijuana. A complete compilation of respondents' answers to this question can be viewed under question 7 in the Appendix. On both sides, respondents mention several familiar reasons that tend to be discussed in previous research, especially with the responses that answer why. Ultimately, the survey data shows the rising trend of pro-legalization attitudes, and the entirety of the respondents' answers demonstrate the versatile benefits of using marijuana, as well as the drawbacks or limitations of using marijuana.

As preliminarily mentioned, we will assume the research presented has substantial claims, even though the findings are anything but consistent—with the exception of findings on legalization's

economic benefits; under this assumption, we can recognize that marijuana can be dangerous. But, what isn't? The truth of the matter is that the world we live in is inherently dangerous. Alcohol is dangerous but legal. Nicotine is dangerous but legal. Unhealthy diets are dangerous, but we still eat and produce foods high in saturated fats, sodium, cholesterol, and other harmful macromolecules. Even many medications and life-saving treatments are dangerous, such as opioids or chemotherapy, but we still prescribe them. Why? Because the benefits outweigh the consequences, and/or public opinion is strong enough to sway policy. The same is true for marijuana. Some potential dangers come with legalizing marijuana; however, an effective system for regulation could considerably diminish these dangers. Additionally, the overall benefits of legalizing marijuana are far too great not to seriously consider supporting legalization.

On a different note, the media has, for a long time, portrayed alcohol as good and marijuana and other drugs as bad, and for the many individuals who took this principle to heart, it can be hard to reshape or evolve their perspectives—and understandably so. On this same note, however, when was that last time that the media or news covered a drunk-driving incident or a student death caused by alcohol poisoning? The chances are, pretty recently. In comparison, when was the last time that the media or news covered a marijuana-related death or hospitalization (apart from synthetic marijuana-related incidents)? The chances are mostly likely never because the math reveals that the odds of a marijuana-related death occurring are nearly 1 in a million (1.06 in a million to be exact), and for marijuana deaths by overdose, the odds are next to nothing, seeing as a death from a marijuana overdose has never even been reported. Now, consider this question: can the same be said for alcohol or other drugs?

After reviewing and analyzing the research presented, we are able to draw the following conclusions concerning marijuana legalization. First, the economy will see increased tax revenue,

employment growth, and cost savings from reducing marijuana-related criminal justice expenditures following marijuana legalization. Second, public health stands to gain a less harmfully addictive and more cost-efficient substance for managing pain, anxiety, medical conditions, stress, and the list goes on. Third, marijuana's influence is greatest among the teenage and young adult population, although this conclusion is not of great concern, as it was also seen that marijuana use tends to die out by the time an individual enters older adulthood. Fourth, pro-legalization attitudes currently dominate public opinion and support for legalization will only continue to increase from here on out. And fifth, according to the experiences of the public, marijuana is not only used in various self-medicating ways but it is also used to bring people together, allowing individuals to bond over their shared interests while munching on their favorite snacks and watching a movie—a truly harmless quality of marijuana.

Although time may not have brought definitive answers to the entire subset of issues within the debate over marijuana legalization, time will continue to reveal one consistent truth: national marijuana legalization is inevitable. In order to reach the inevitable in a more timely manner, however, researchers must continue attempting to lessen the gap between available data and unavailable data concerning marijuana, just as this paper attempts to do. A potential next step in future research would be to create a longitudinal experiment designed to track a group of marijuana users over at least 50 years to gain empirical and conclusive evidence on marijuana's impact on health and lifestyle as a whole. In 50 years, however, legalization will most likely have already happened at the national level, but at least academics will be able to legally cheer their findings with a celebratory joint. ■

REFERENCES

- Anderson, D.M., & Rees, D. I. (2022). The public health effects of legalizing marijuana. *Cato Research Briefs in Economic Policy*, 285. Cato Institute. <https://www.cato.org/research-briefs-economic-policy/>
- Chiu, V., Leung, J., Hall, W., Stjepanović, D., & Degenhardt, L. (2021, Aug. 1). Public health impacts to date of the legalization of medical and recreational cannabis use in the USA. *Neuropharmacology*, 193. <https://doi.org/10.1016/j.neuropharm.2021.108610>
- Dills, A., Goffard, S., Miron, J., & Partin, E. (2021). *The Effect of State Marijuana Legalizations: 2021 Update*. Cato Institute. <http://www.jstor.org/stable/resrep30177>
- Evans, D. G. (2013, Dec. 30). The economic impacts of marijuana legalization. *The Journal of Global Drug Policy and Practice*. https://www.drugfree.org.au/images/pdf-files/library/Medical_Marijuana/MarijuanaLegalization-DavidEvans.pdf
- Felix, A., & Shampine, S. (2022, Oct. 6). Marijuana industry has boosted economic activity in the Tenth Federal Reserve District. *KC Fed Economic Bulletin*. <https://www.kansascityfed.org/Economic%20Bulletin/documents/9157/EconomicBulletin22FelixShampine1006.pdf>
- Graham, R. (2014, Oct. 8). Is marijuana good for public health? *JSTOR Daily*. <https://daily.jstor.org/marijuana-and-public-health/>
- Hasan, K. M. (2023). Cannabis unveiled: An exploration of marijuana's history, active compounds, effects, benefits, and risks on human health. *Substance Abuse: Research and Treatment*, 17. <https://doi.org/10.1177/11782218231182553>
- Miron, J. A., & Waldock, K. (2010). The budgetary implications of drug prohibition. *National Bureau of Economic Research*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1710812
- Paul, M. S. (2018). *The effects of the legalization of recreational marijuana*. <https://www.cji.edu/wp-content/uploads/2019/04/the-effects-of-the-legalization-of-recreational-marijuana.pdf>
- Sellman, D. (2020). Alcohol is more harmful than cannabis. *The New Zealand Medical Journal*, 133(1520), 8-11. https://assets-global.website-files.com/5e332a62c703f653182faf47/5f3f3b3501331c76cd4b8ade_Sellman%20FINAL.pdf
- Thorpe, J. W., & Lean, J. (2015). The legalization of marijuana: An analysis into the economic impacts on Colorado's economy--will future states choose to follow such policies? *Semantic Scholar*. <https://www.semanticscholar.org/paper/The-Legalisation-of-Marijuana%3A-An-Analysis-into-the-Thorpe-Leanc3b508acc97ddc074c4571a36ea1f043b634c58>

Kora Martin is from Bloomington, Indiana and is currently working towards completing her Bachelor's degrees in Psychology and Criminal Justice. After graduation, she plans to pursue a career in behavioral science and research.

APPENDIX

Survey link: https://iu.co1.qualtrics.com/jfe/form/SV_d3WErcwy7GY0vzw

Q1. What gender do you identify with?

| | |
|-------------------|----------|
| Male | 23 (46%) |
| Female | 27 (54%) |
| Non-binary | 0 (0%) |
| Transgender | 0 (0%) |
| Other | 0 (0%) |
| Prefer not to say | 0 (0%) |

Q2. What is your current age?

| | | | |
|----|---------|----|----------|
| 18 | 1 (2%) | 19 | 11 (22%) |
| 20 | 5 (10%) | 21 | 4 (8%) |
| 22 | 3 (6%) | 23 | 3 (6%) |
| 25 | 1 (2%) | 30 | 1 (2%) |
| 32 | 1 (2%) | 34 | 2 (4%) |
| 37 | 1 (2%) | 38 | 2 (4%) |
| 39 | 2 (4%) | 41 | 1 (2%) |
| 42 | 1 (2%) | 43 | 2 (4%) |
| 44 | 1 (2%) | 47 | 1 (2%) |
| 54 | 1 (2%) | 56 | 1 (2%) |
| 62 | 1 (2%) | 63 | 1 (2%) |
| 67 | 1 (2%) | 69 | 1 (2%) |
| 73 | 1 (2%) | | |

Q3. What is your race/ethnicity?

| | |
|--|----------|
| White/Caucasian | 45 (90%) |
| Black/African American | 1 (2%) |
| Hispanic/Latino | 4 (8%) |
| Asian | 0 (0%) |
| American Indian or Alaska Native | 0 (0%) |
| Native Hawaiian/Other Pacific Islander | 0 (0%) |
| Other | 0 (0%) |
| Prefer not to say | 0 (0%) |

Q4. What is your highest level of education?

| | |
|------------------------------|----------|
| Did not complete high school | 0 (0%) |
| High School Diploma or GED | 13 (26%) |
| Some college | 16 (32%) |
| Associate's degree | 9 (18%) |
| Bachelor's degree | 7 (14%) |
| Master's degree | 4 (8%) |
| Doctoral Degree | 1 (2%) |

Q5. Have you ever used Marijuana in any of its forms (bud, hash oil, wax, edibles, or other)?

| | |
|-----------------------|----------|
| Yes | 39 (78%) |
| No | 11 (22%) |
| Yes, but accidentally | 0 (0%) |
| Prefer not to say | 0 (0%) |

Q6. If you answered yes to the question above, how often do you use Marijuana? Select the answer choice that best describes you.

| | |
|---|----------|
| Used to use Marijuana often, but not anymore | 3 (6%) |
| Used to use Marijuana mildly, but not anymore | 5 (10%) |
| Used to use Marijuana rarely, but not anymore | 7 (14%) |
| Currently use Marijuana rarely | 2 (4%) |
| Currently use Marijuana a few times a year | 3 (6%) |
| Currently use Marijuana a few times a month | 4 (8%) |
| Currently use Marijuana a few times a week | 3 (6%) |
| Currently use Marijuana daily | 12 (24%) |
| I've never used Marijuana | 11 (22%) |

Q7. Please briefly describe (in 1-3 sentences) why, or why you do not, use Marijuana. (Example responses may be for recreational purposes, pain purposes, or because it is illegal, and so on. Please be specific)

| Respondents' answers to why they do use: | Respondents' answers to why they do not use: |
|---|--|
| "Recreational" | "No desire" |
| "I use it just to enjoy it with others around me and also helps with the stress of school" | "Never had the desire to try it. I drink regularly and tend to avoid any drugs" |
| "I use marijuana for recreational purposes, to relax my mind and body." | "I've never had any interest in using Marijuana or understood the benefits of it." |
| "I used so that I can relax. Mostly to take stress away." | "Bad for you" |
| "Mental purposes" | "I be thinking crazy off the weed" |
| "I use it for pain, relaxation, and sleep because I have a high stress and physical job, but I never use it at work or beforehand." | "Not interested" |
| "Helps me sleep and also reduces my stress" | "Because it's illegal and I was too afraid to try it." |
| "I think marijuana can be a good and bad thing at the same time. It does help you to distract yourself from your problems, but that only lasts so long. It also is bad on your body health wise. I use it to keep my mind off of things, but like I said that doesn't always work." | "I have anxiety. MJ made me so anxious. I freaked out." |
| "Used it for anxiety" | "I tried it, felt like I was going to die" |
| "Used to use for recreational purposes" | "Just never seen a reason to" |
| "I use marijuana for Recreational purposes. It helps me stay in a more positive mindset and happier mood. It also helps me be more creative and also helps me focus more efficiently on one task at a time personally." | "My mom always said drugs were for losers. I also don't like the idea of it making me feel any way that I can't control and have to wait for it to <u>ware</u> off." |
| "Mostly for pain relief." | "Never was interested in it" |
| "Recreational" | "Illegal and no interest in its effect on body." |
| "Smoking weed helps me with anxiety/ <u>stress</u> , and relaxes me." | "I have no desire to use Marijuana" |

| | |
|--|---|
| "Smoking weed helps me with anxiety/ <u>stress, and</u> relaxes me." | "I have no desire to use Marijuana" |
| "I only use marijuana a few times a year mainly for medicinal uses. I will also use it for stressful times or special occasions." | "Because I don't believe that it's something you should be inhaling into your lungs" |
| "To help me relax the mind and <u>body</u> " | "Used to use for recreation. Don't anymore because it's illegal" |
| "To help me sleep, manage pain, manage stress, manage anxiety, and help with <u>ADD</u> " | "I just grew out of it. I didn't like how it made me feel in certain surroundings. <u>Therefore</u> I just stopped using altogether." |
| "Because it makes me feel <u>good</u> " | "I stopped using marijuana because I get drug tested after for my job." |
| "Recreational use. Find it fun to smoke when the day is over and you're in chill mode. <u>Also</u> it makes movies and food better." | "I don't use marijuana because I am a <u>Christian</u> so I have religious beliefs against it. I don't think things that alter how we think for a <u>period of time</u> are good for us." |
| "Helps me sleep and relaxes <u>me</u> " | "I used to use it for recreational purposes but stopped because I didn't get any joy out of it anymore" |

Q8. If you've answered yes to using Marijuana, at what age range do you believe your usage was the highest?

| | |
|--|----------|
| 10-16 years old- | 0 (0%) |
| 16-22 years old- | 29 (58%) |
| 22-28 years old- | 3 (6%) |
| 28-34 years old- | 2 (4%) |
| 34-40 years old- | 3 (6%) |
| 40-50 years old- | 0 (0%) |
| 50-60 years old- | 0 (0%) |
| 60-70 years old- | 0 (0%) |
| Marijuana use has been stable over many years- | 2 (4%) |
| I've never used Marijuana- | 11 (22%) |
| Prefer not to say- | 0 (0%) |

Q9. Does Marijuana's current illegal status affect your use or non-use of Marijuana?

| | |
|--|----------|
| Yes, since it is illegal I do not use Marijuana- | 6 (12%) |
| Yes, since it is illegal I do not use Marijuana often- | 3 (6%) |
| No, even though it is illegal I still use Marijuana- | 19 (38%) |
| No, I have other reasons for not using Marijuana- | 21 (42%) |
| Prefer not to say- | 1 (2%) |

Q10. In your experience, do you believe Marijuana use has ever impacted your health?

| | |
|--|----------|
| Yes, in a positive way- | 12 (25%) |
| Yes, in a negative way- | 3 (6%) |
| No, Marijuana has no impact on my health in my experience- | 24 (50%) |
| Unsure- | 9 (19%) |
| Prefer not to say- | 0 (0%) |

Q11. In your experience, do you believe Marijuana use has ever interfered with your daily responsibilities? (Includes parental, professional, educational, or other responsibilities)

| | |
|--------------------|-----------|
| No, never- | 33 (≈71%) |
| Yes, rarely- | 10 (≈21%) |
| Yes, sometimes- | 1 (≈2%) |
| Yes, often- | 0 (0%) |
| Yes, always- | 0 (0%) |
| Unsure- | 3 (≈6%) |
| Prefer not to say- | 0 (0%) |

Q12. In your opinion, would legalizing Marijuana affect your usage or non-usage of Marijuana?

| | |
|---|----------|
| Yes, my usage would increase- | 9 (18%) |
| Yes, but my usuals would decrease- | 0 (0%) |
| Yes, I might be open to trying marijuana- | 5 (10%) |
| No, my non-usage would not change- | 18 (37%) |
| No, my current usage would remain the same- | 16 (33%) |
| Prefer not to say- | 1 (2%) |

Q13. If Indiana were to hold a ballot vote for legalizing recreational Marijuana, how would you be inclined to vote?

| | |
|--|----------|
| I would vote yes in favor of legalization- | 37 (76%) |
| I would vote no against legalization- | 1 (2%) |
| I wouldn't vote- | 3 (6%) |
| I have no preference- | 8 (16%) |
| Prefer not to say- | 0 (0%) |

Q14. Have you ever used Marijuana as a substitute for other drugs or alcohol? (Examples of other drugs include opioids, stimulants, methamphetamines, psychedelics, or other)

| | |
|--------------------|----------|
| Yes- | 10 (21%) |
| No- | 36 (75%) |
| Unsure- | 2 (4%) |
| Prefer not to say- | 0 (0%) |

Q15. In the event that Marijuana is legalized, would your usage or non-usage of other drugs and alcohol change?

| | Would not change | Would decrease | Would increase | Don't currently use | Unsure |
|--|------------------|----------------|----------------|---------------------|--------|
| Use of opioids (painkillers such as morphine, OxyContin, fentanyl, or other) | 7 (15%) | 2 (4%) | 0 (0%) | 38 (≈77%) | 2 (4%) |
| Use of psychedelics (common examples include psilocybin mushrooms and LSD) | 9 (19%) | 0 (0%) | 0 (0%) | 40 (81%) | 0 (0%) |

| | | | | | |
|--|----------|---------|--------|----------|---------|
| Use of alcohol | 24 (49%) | 5 (11%) | 0 (0%) | 11 (23%) | 8 (17%) |
| Use of methamphetamines or stimulants (common examples include meth and cocaine) | 6 (13%) | 1 (2%) | 0 (0%) | 41 (83%) | 1 (2%) |
| Use of other drugs | 7 (15%) | 2 (4%) | 0 (0%) | 38 (77%) | 2 (4%) |

Q16. Do you feel that you were able to comfortably and honestly answer the questions in this survey?

| | |
|--|----------|
| Yes, I was comfortable answering all of the questions | 49 (98%) |
| I was comfortable answering most of the questions | 0 (0%) |
| I was comfortable answering some of the questions | 0 (0%) |
| No, I was uncomfortable answering any of the questions | 1 (2%) |
