



The National Marijuana Initiative

An Initiative of the High Intensity Drug Trafficking Areas Program

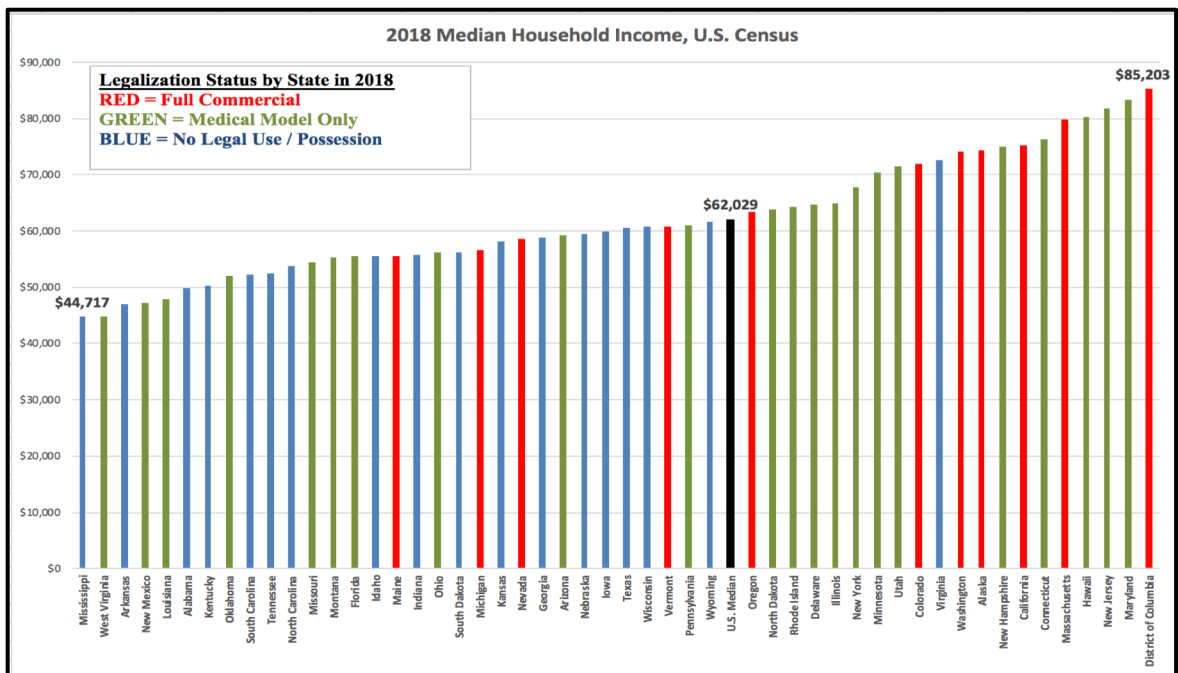
Retail Purchases of Marijuana Products – Consumer Awareness

Introduction

The following report provides insight into the potential impacts for those consumers who regularly purchase marijuana products from the retail market. Additionally, it allows for insights into household income levels, issues concerning some marijuana products, industry consumer analysis and a table to project estimated monthly / annual buying costs. This estimate is framed using the dollar expense incurred for purchases on a monthly basis and projected to a potential annual cost when multiplied by 12 (months). This document is for general information purposes only and acknowledges that actual expenses will vary by individual buying habits and / or geographic areas.

Median Household Income Levels for 2018

The annual median income per household, per state, is determined by the United States Census Bureau's "American Community Survey." In 2018, annual household income levels in America ranged from a low of \$44,717 (Mississippi) to high of \$85,203 (District of Columbia), with a median value of \$62,029 for all 50 states and the District of Columbia.¹ A median income of \$62,029 translates into a gross monthly income, *before taxes*, of \$5,169. Some financial planners suggest that 50% of a monthly income should be budgeted for fixed expenses (e.g. house / rent payment, car payment, insurance) and other living expenses.² Net income, *after taxes*, is what's left over to pay fixed expenses, monthly living expenses (bills, food, gas, savings) and any remaining balance can be used as discretionary money. When considering a discretionary purchase buyers should consider the question, "Do I need this or simply want this?" In short, based on income and required expenses can I afford to do this? The chart below shows the high, low and median income values, by state and whether that state had legalized marijuana in 2018.



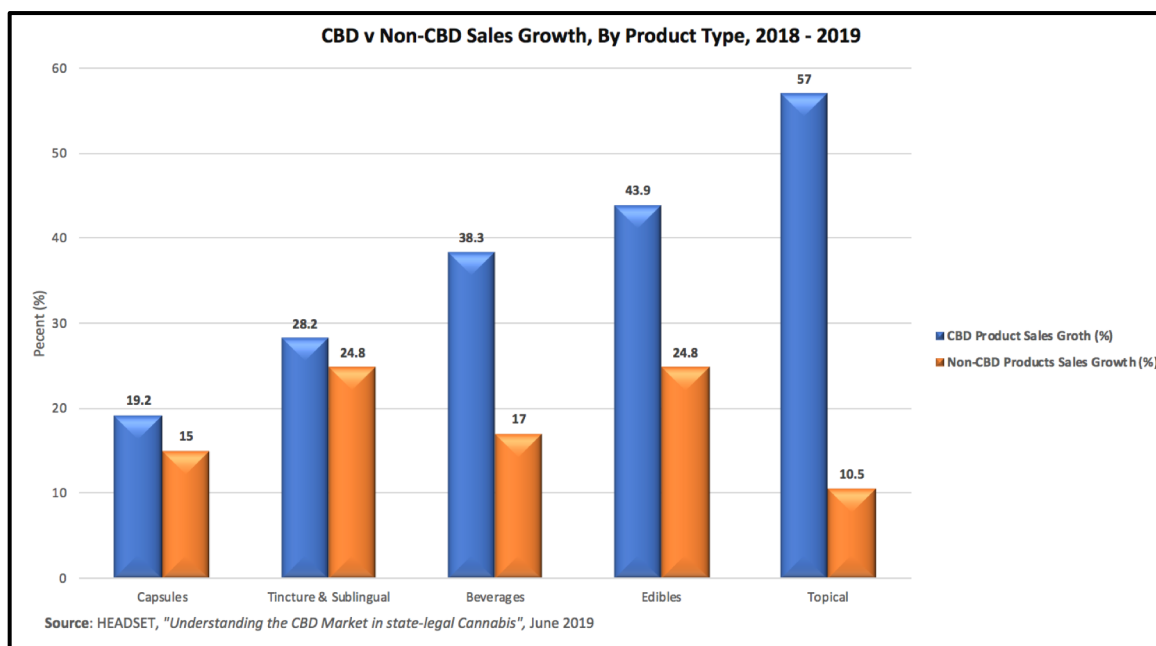
Commercially Available Marijuana Products and Market Research Data

Just as annual household income levels vary from state to state, so do the retail prices for the numerous marijuana products commercially available in legalized states. Like any other commodity, retail sales and pricing are dependent on what consumers will tolerate in an open market environment. The increased levels of Delta-9 Tetrahydrocannabinol (THC) found in many of these products often comes with a higher price tag. Additionally, those increased levels of THC have become a concern to public health officials. THC is the primary cannabinoid responsible for producing impairment and the euphoric feeling associated with “getting high.” In recent years, the potency levels of THC in marijuana products has been on the rise to meet the growing demand by consumers for more potent products.⁴ The public health concern over potency is a potential increase risk of addiction, pulmonary disease and mental health issues. However, THC is not the only cannabinoid of concern in the open marketplace.

With over 100 plus cannabinoids found in the marijuana plant, the two most commonly associated with marijuana products are THC, as noted above, and Cannabidiol (CBD). CBD is believed by many to have a broad spectrum of health benefits, for a variety of medical conditions, while not causing impairment to the consumer. To date Epidiolex® is the only CBD drug that has undergone clinical research and approval for use by the Food and Drug Administration (FDA) to treat two very specific neurological disorders in children.⁵ Initially in 2018, Epidiolex® was classified as a Schedule V drug and required a prescription from a physician to be used. Effective April 6, 2020, the drug was declassified by the Drug Enforcement Administration (DEA) as a controlled substance; however it still requires a prescription from a physician.⁶

CBD Products in the Marketplace

Commercial CBD products of all types are becoming increasingly more popular and available outside of the typical dispensary setting. Businesses such as pharmacies, liquor stores and online direct sales offer CBD products. Comparing product growth rates from 2018 – 2019, the categories showing the greatest growth in sales has been topicals, edibles and beverages. Edibles and beverages share a similar consumer interest in the THC-infused consumable product market as well.^{7,8}



CBD – Potential Risks to Health

Some CBD products available in the open market make claims of health benefits to humans and animals alike, treating issues such as pain management, anxiety, muscle and digestive disorders. While CBD alone does not cause impairment, it is not a benign substance. Consumers in the marketplace need to be aware of the potential risks and side effects associated with using CBD products. Risks outlined by the Food and Drug Administration (FDA) include but are not limited to:

- Liver damage
- Unknown interaction with other prescription medications
- Male reproductive toxicity - (*e.g. low sperm count and motility*)
- Mood changes such as agitation and irritability
- Unknown purity and potency levels or quality control standards from producers ⁹

With the exception of Epidiolex,[®] there are still many unanswered questions about the risks or benefits from either THC or CBD and their effect on the human body. Substantial clinical research is needed to have a better understanding of these products. Research will help to establish a valid foundation of knowledge concerning the safety, effectiveness and establishing a consensus in the scientific and medical communities if these products should be used therapeutically.

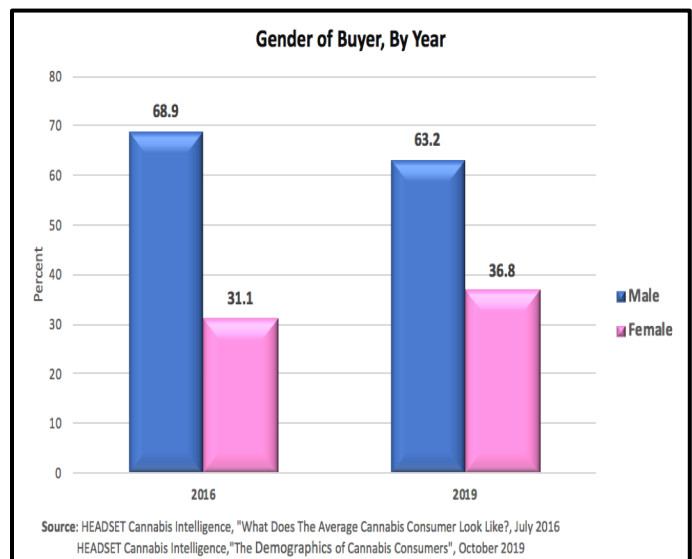
Consumer Demographic Information

Like any business, to be successful you have to know and understand the clientele you service. The commercial marijuana industry is no different in this respect and over the years has developed marketing data on its buyers. The following is a comparison of marijuana consumer demographic information collected from 2016 and 2019 from participants enrolled in various consumer loyalty programs at dispensaries in select legalized states.^{10,11} Of note is the shift since 2016 on how the age group of consumers was being tracked. A shift away from using block age groups by year to a “generational label” (i.e. Gen X, Millennial, Baby Boomer) approach to examining buying habits.

Gender in Purchases

As seen in the chart to the right, males have been the predominant gender in the purchasing market; twice that of females. However, since 2016 the percentage of males making purchases has declined by 8 percent.

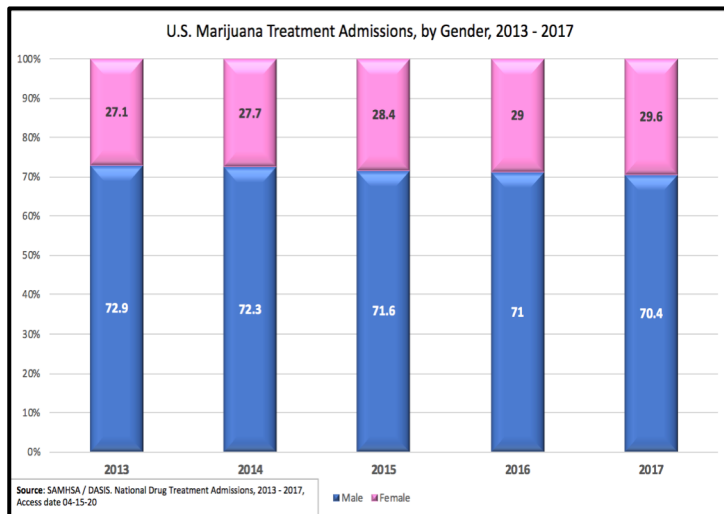
While females still make up approximately 1/3 of the buying market, their percentage has increased by 18 percent since the 2016 data was collected.



Gender Patterns in Drug Treatment

Purchasing patterns are not the only place where males are predominant. The same general pattern is also seen in admissions to drug treatment programs, specific to Cannabis Use Disorders (CUD).

National data provided by the Substance Abuse and Mental Health Services Administration (SAMHSA), Treatment Episode Data Set (TEDS), tracks patient demographic admissions into drug treatment facilities in the United States. National treatment admission data from 2017 – 2019 is not yet available.

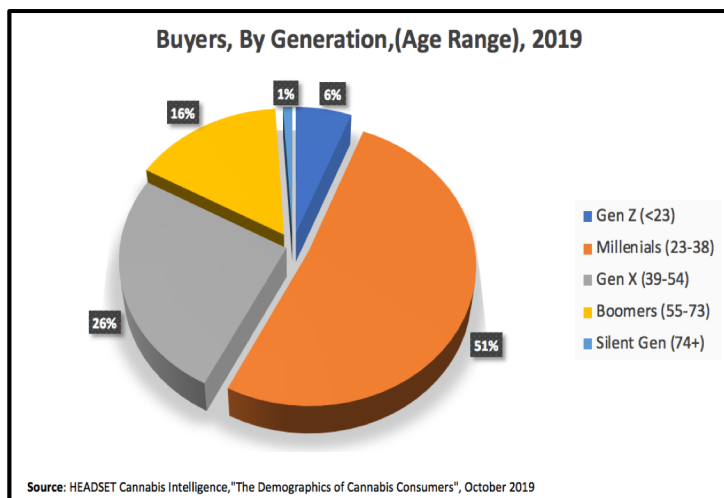


The above chart identifies the total percentage of people in the United States, from 2013 – 2017, in treatment for marijuana use. With respect to gender and specific to marijuana, again males are the primary group seeking treatment nationally for a CUD by a margin of slightly more than 2:1. However, like the previous chart on gender and buying, the percentage of males seeking treatment has decreased slightly (3.4%). Additionally, there has been an increase (9.2%) in the percentage of females in treatment for CUD. Based on the three most recent years of SAMHSA / TEDS data (2015 – 2017), the yearly average of the number of people nationally in treatment for a CUD is approximately 239,000.

Age Group Patterns

Data collection from 2016 revealed that 51% of buying public was of the age group 21 – 34 years. (Gen Z and Millennials by modern generational tags)

In 2019 generational tags Gen X, Millennials, and Baby Boomers were used to classify buyers. In 2019, Millennials alone accounted for 51% of tracked buyers. The age range for Millennials is 23 – 38 years of age and closely mirrors the results from 2016.



Sales Trends in 2019

Males were responsible for 63% of all sales and 70% of sales for concentrates. Males also outspent females by nearly 8%.

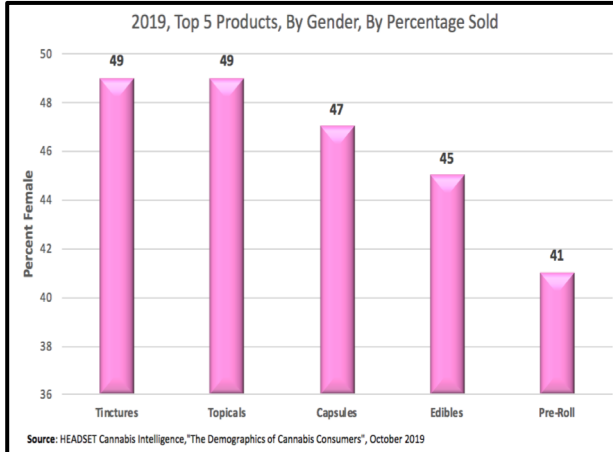
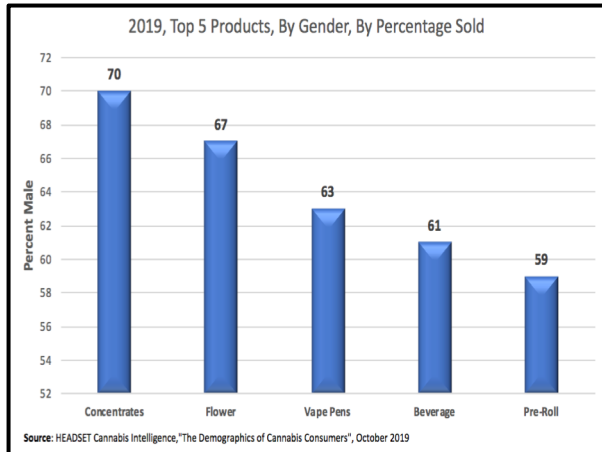
Females favored topicals and tinctures equally at 49% of sales. Women also purchased more CBD products than men, 8.3% to 5% respectively.

Millennials spend less and buy lower priced products per purchase; but with the highest frequency of return trips.

Millennials and Gen X purchases were responsible for 77% of all sales.

Gen Z (under age 23) were only 6% of buyers. According to Headset Cannabis Intelligence, who released this data, "Gen Z is either [too] new to the workforce or just finishing college, two situations that don't denote a lot of disposable income."

Product Preferences by Gender in 2019



Spending Levels, By Generation, 2019 Basket Size

Basket size refers to the total amount of goods purchased in a single visit to the business. The generational basket size averages (and age groups) for 2019 were:¹²

Silent Generation (age 74+) = \$33.68

Millennials (age 23-38) = \$25.01

Baby Boomers (age 55-73) = \$30.66

Gen Z (age <23) = \$23.59

Gen X (age 39-54) = \$28.31

Price and Potency Examples

Common types of commercially available marijuana products available are listed in the following chart. They are listed as "price per gram" or per unit cost with the claimed THC potency range included. THC potency levels, as well as other cannabinoid levels, are generally "self-reported" by the business entities and generally with no public declaration on how the potency values were determined. The states selected represent a random cross-section of states where marijuana has been legalized for commercial use across the continental United States.¹³

Pricing and Potency Reported, By State

	Raw Cannabis Per Gram	Concentrate Per Unit Price	Extracts Per Unit Price
California	\$37	\$66	\$61
THC Potency by %	5 - 30%	15 - 95%	15 - 96%
Oregon	\$20	\$66	\$59
THC Potency by %	5 - 34%	13 - 97%	26 - 96%
Colorado	\$12	\$65	\$57
THC Potency by %	10 - 35%	20 - 99%	20 - 97%
Illinois	\$41	\$75	\$87
THC Potency by %	16 - 31%	36 - 99%	30 - 93%
District of Columbia	\$18	\$47	\$50
THC Potency by %	18 - 30%	30 - 94%	52 - 92%

Source: National Marijuana Initiative, Retail Market Research, 4Q2019

Potential Out of Pocket Expenses to Marijuana Consumers

The greatest variable in looking at expenses is that the purchasing patterns among consumers will fluctuate. At one end of the spectrum an individual may only purchase a commercial marijuana product as infrequently as once in a week or month; to someone who might be purchasing multiple times in a week.

As noted earlier the level of available discretionary spending money may influence a decision to make a purchase, as will the response to if this is a “need” purchase or simply a “want” purchase. The casual infrequent buyer will certainly have a different perspective than a heavy user or one with a Cannabis Use Disorder (CUD). In the latter case, where addiction is an issue the need / want question will more likely favor need as a response.

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), they define that a “Current User” is an individual that has used marijuana at least once in the last 30 day period.¹⁴ Based on that definition, a “current user” is one who uses marijuana either on a monthly to daily basis.

The table that follows allows for a cursory look at the aggregate purchase costs per month, for marijuana products, to determine an estimate of annual expenditures by the consumer. This model only looks at overall total costs without consideration to the type of marijuana product purchased or frequency of use by an individual. The scale of this table allows for a wide range annual costs based upon monthly purchase amounts (\$10 - \$500 per month). For values in excess of \$500, the actual per month expenses can be broken into two smaller amounts to determine annual costs and the annual sums added together.

In the end, it is up to the individual consumer to determine if they possess the means and ability to be able to afford these purchases and at what rate of frequency. In this respect marijuana shares the same issues as a consumable product in the public market as does alcohol and tobacco.

Consumer Expense per Month / Year Estimate

Cost per Month	Cost per Year	Cost per Month	Cost per Year	Cost per Month	Cost per Year	Cost per Month	Cost per Year	Cost per Month	Cost per Year
\$10	\$120	\$110	\$1,320	\$210	\$2,520	\$310	\$3,720	\$410	\$4,920
\$20	\$240	\$120	\$1,440	\$220	\$2,640	\$320	\$3,840	\$420	\$5,040
\$30	\$360	\$130	\$1,560	\$230	\$2,760	\$330	\$3,960	\$430	\$5,160
\$40	\$480	\$140	\$1,680	\$240	\$2,880	\$340	\$4,080	\$440	\$5,280
\$50	\$600	\$150	\$1,800	\$250	\$3,000	\$350	\$4,200	\$450	\$5,400
\$60	\$720	\$160	\$1,920	\$260	\$3,120	\$360	\$4,320	\$460	\$5,520
\$70	\$840	\$170	\$2,040	\$270	\$3,240	\$370	\$4,440	\$470	\$5,640
\$80	\$960	\$180	\$2,160	\$280	\$3,360	\$380	\$4,560	\$480	\$5,760
\$90	\$1,080	\$190	\$2,280	\$290	\$3,480	\$390	\$4,680	\$490	\$5,880
\$100	\$1,200	\$200	\$2,400	\$300	\$3,600	\$400	\$4,800	\$500	\$6,000

Summary

When making the choice to purchase marijuana-based products, the consumer should be aware of the potential impacts of that choice, both financially and potentially to their own health.

As with any purchase made, there can be short-term and long-term consequences financially. All of which are relative to the income level of the buyer, their accessibility to disposable income and prioritization. A key factor for all consumers contemplating any purchase is not only the actual cost of the goods purchased but of importance, the underlying internal value (need / want and affordability) that the buyer places upon the item to be acquired.

Those living near a poverty threshold or in states with lower median household incomes will likely have less disposable income once monthly fixed expenses are addressed. Those households would be more prone to feel the financial impacts of discretionary purchases of marijuana or other such consumables. This could be especially true if those purchases take place on a frequent and reoccurring basis.

In terms of public health, the adult use rates for marijuana products has increased in America. Similarly, so has the demand for more potent products by consumers. The industry in turn has rallied to meet this demand with concentrates and extracts derived from raw plant material with increasingly stronger THC levels. However, this trend is causing concerns in public health sectors due to no standards addressing cannabinoid potency levels and quality control. Equally concerning is:

- The sale of specific goods in the public market with unsupported claims of health benefits
- Little to no warning of potential harms to consumers stemming from use
- The lack of valid clinical research findings of effectiveness that has been broadly accepted by the medical and scientific communities.

The call for more valid research is essential in understanding today's marijuana, its place in the commercial market and to increase consumer awareness of any benefits (or risks) associated to use of these products.

Endnotes:

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4. Pierre, J. "Risks of Increasingly Potent Cannabis: The Joint Effects of potency & Frequency." *Current Psychiatry*, February 2017
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6. GW Pharmaceuticals, Media release, "Epidiolex® (cannabidiol) Oral Solution Has Been De-scheduled and Is No Longer A Controlled Substance." April 6, 2020
7. HEADSET Cannabis Intelligence, *What Does The Average Cannabis Consumer Look Like?* July 2016
8. HEADSET Cannabis Intelligence, *The Demographics of Cannabis Consumers*, October 2019
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10. Ibid, 7.& 8.
11. Ibid, 7.& 8
12. Ibid, 8
13. National Marijuana Initiative (NMI), *Marijuana Market Research*, 4Q19, (Internal, Non-published)
14. samhsa.gov. "Key Substance Use and Mental Health Indicators in the United States: Results from the 2018 National Survey on Drug Use and Health." p.6, August 2019