

# Canadian Cannabis Market Insight

## Dentsu Aegis Data Competition

*Rye-High Analytics*

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# 1 Overview of Data

It has been a little over a year since the federal government legalized the use of Cannabis in October 2018. While the data suggests that legalization did not have a significant impact on consumption rates, there is still a high rate of growth in retail sales of cannabis presumably due to the amount of people switching from illegal to legal sources for their products. According to a 2019 Statistics Canada survey, 48% of consumers obtain their product from legal sources while 40% still use illegal sources[Canada, 2019]. There is an opportunity to draw in the rest of the consumers who still obtain cannabis from illicit sources. Our analysis concluded that Cannabis is relatively inelastic with respect to price, and that legalization has created a new segment of people who prefer legal cannabis and are willing to pay more for it. It appears that government oversight gives consumers an assurance with regards to quality and safety, attributes that allow legal retailers to charge a premium on their product relative to illegal sources.

Overall sentiment towards cannabis remains relatively unchanged since legalization, especially for those who were already consuming cannabis. According to DAN DNA[DNA, 2020], a majority of users continue to support the use of cannabis, while some non-users switched their perception of cannabis to neutral from negative. Despite legalization, illegal sources are still perceived to be more affordable over their legal counterparts. If anything, there is an increase in concerns among the population with regards to the trustworthiness and reliability of Cannabis firms. Several breaches in customer privacy - notably the Leafly and OCS (Ontario Cannabis Store) data breaches - have had a negative effect on how much Canadians are trusting both the cannabis firms and government. There is an opportunity to increase trust among Canadians towards a particular Cannabis brand by engaging customers in two-way communication (i.e Twitter customer engagement), creating advertisements that emphasize safety and privacy, encourage user-generated content (Starbucks cups), etc.

## 2 Analysis and Insights

### 2.1 Change in Consumption Vs Change in Retail Sales

Prior to legalization, there has been a gradual increase in self-reported cannabis usage since surveys were being taken beginning in 1971.

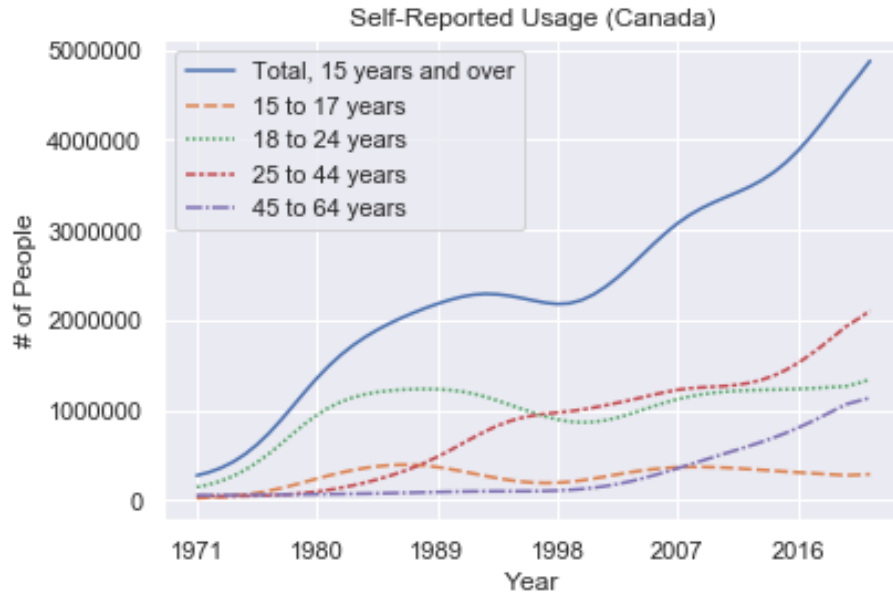


Figure 1: Graph showing cannabis consumption over time. Source: Statistics Canada. Table 36-10-0597-01. Prevalence of cannabis consumption in Canada

The question isn't whether or not there is an increase in cannabis usage from year to year, but rather is there an increase in the rate of change. There is no significant change in the growth of users between before and after legalization. However, retail cannabis sales are growing considerably since legalization while consumption remains relatively constant. These two trends suggest that legalization hasn't created many new users, but rather, the legal market is gradually acquiring customers from the illegal market.



Figure 2: Graph showing monthly retail sales. Source: Statistics Canada. Monthly Cannabis Retail Sales

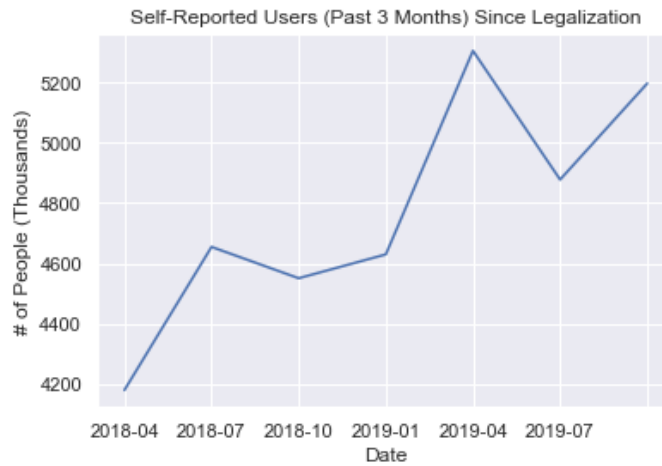


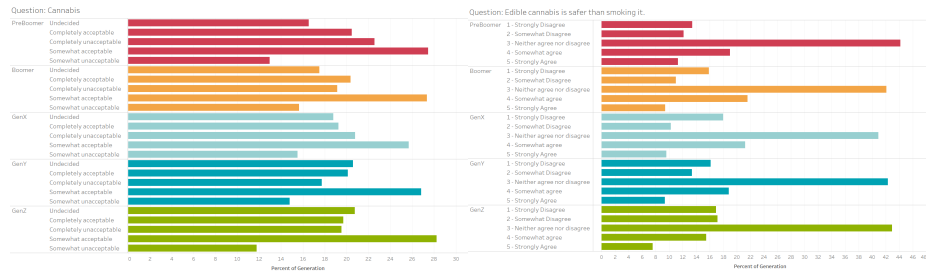
Figure 3: Graph showing Self-Reported Usage in past 3 months. Source: Statistics Canada.

Observe that in Figure 2, monthly retail cannabis sales increased over 300% while self-reported usage (fig. 3) in the past 3 months increased by only 20% in comparison. This discrepancy in growth implies that the legal cannabis market is slowly carving into the illegal market. We infer that the legalization of cannabis didn't create a substantial impact in the amount of new users, but was able to get a considerable number of black market customers to switch to legal sources.

## 2.2 Cannabis Sentiments and Usage

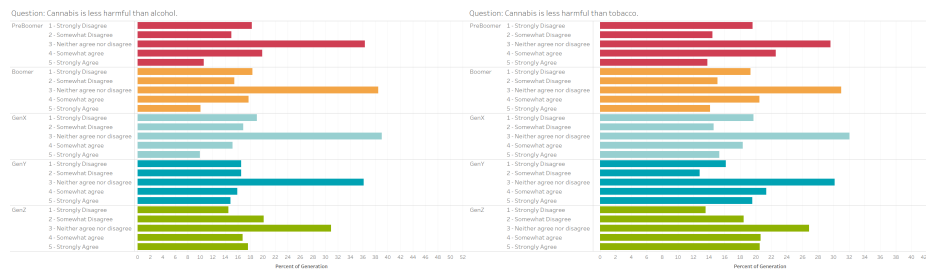
The figures provided in this section serve as support for the trends detected in the Canadian cannabis market. Trending this market was a three pronged approach: consumer usage, price, and and production.

With respect to self-reported usage, a steady increase is observed in Figure 3 dating back to the early 1970s. Total consumption sees the largest increase with the 18-24 year old age group showing a (unsurprisingly) steady use throughout time. This however seems to be a byproduct of the volume of people consuming as opposed to changing perceptions. Figures 4 and 5 shows that most the sentiment towards cannabis is relatively uniform across all ages with a strong indifference observed amongst all generations. More surprisingly, the market does not show any distaste for cannabis when compared to more commonly used substances such as alcohol or tobacco. In fact, it seems as if they have them in a similar category (as shown by the indifference



(a) Responses to whether or not cannabis is an acceptable substance to use (b) Responses to whether edible cannabis is a safer drug than smoked cannabis

Figure 4: Cannabis sentiments based on survey responses



(a) Responses to whether cannabis is a safer drug than alcohol (b) Responses to whether cannabis is a safer drug than tobacco

Figure 5: Cannabis sentiments based on survey responses

## 2.3 Consumer Price vs Producer Price

In the next step of analysis, the consumer price per gram of cannabis was tracked over the previous 4 years. It is worth noting that legalization beyond medical use only occurred during the last time stamp of the plot so previous data points are restricted to medical cannabis. Never the less, a systematic decrease in price for both consumers and producers is observed which bodes well for the future. Due to the inelastic nature of the product (touched upon later), it opens up opportunities to further increase profit margins for businesses (particularly larger, more scalable operations). The trends for are shown in Figure 6 and split by major Canadian regions. Worth noting is the regions with the largest profit margins, British Columbia and Ontario, should be exploited with respect to sales while low profit margin areas such as Quebec and the Prairies need to be examined further in order to increase efficiency (a second data challenge perhaps).

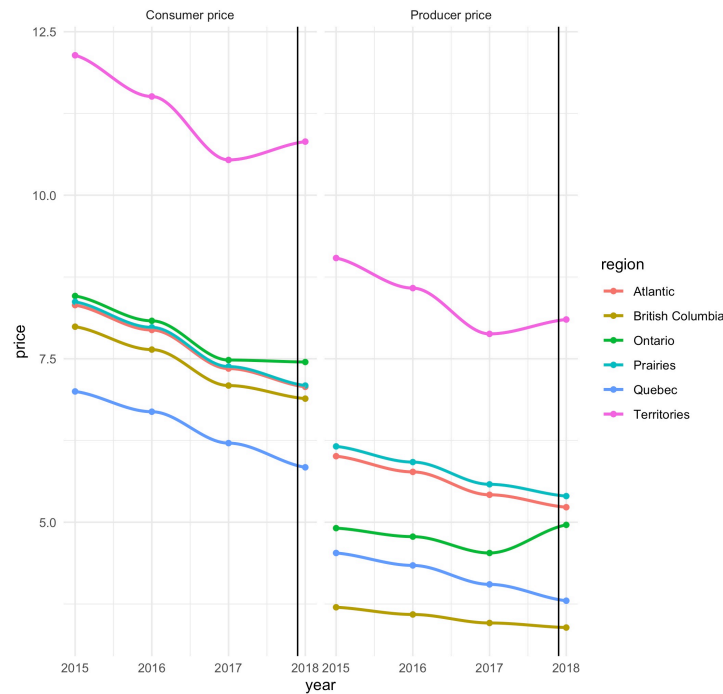


Figure 6: Graph showing price per gram of cannabis for consumers and producers as recorded by Statistics Canada. Legalization happened November 2018

## 2.4 Cannabis Production

Canada has long been a prominent global producer of cannabis with substantial agricultural infrastructure in the West. Figure 7 shows a surprising downward

trend in non-medical uses and drastic increase (both production and inventories) of medical cannabis. From earlier, we notice that the increase in medical marijuana use trumps the decrease in recreational use thus the increase is explained by the uptick in prescribed usage. To keep up with this jump, supplies have also increased over the years.

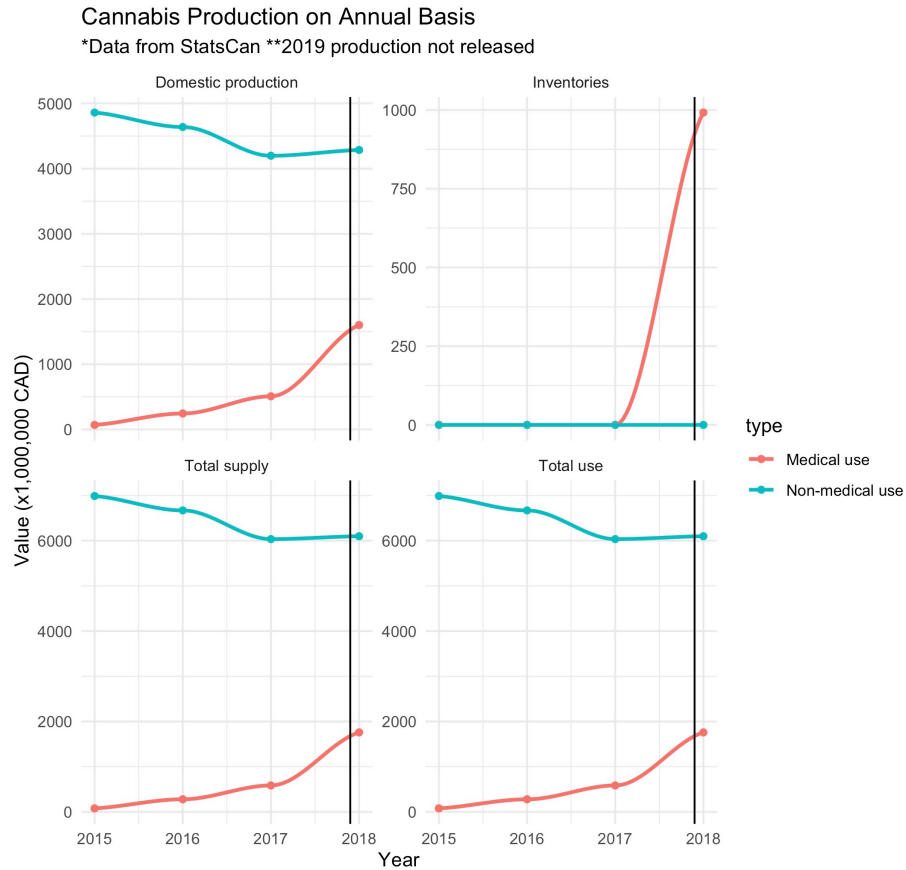


Figure 7: Graph showing domestic cannabis production as recorded by Statistics Canada. Legalization happened November 2018

## 2.5 Limitations of Data Set

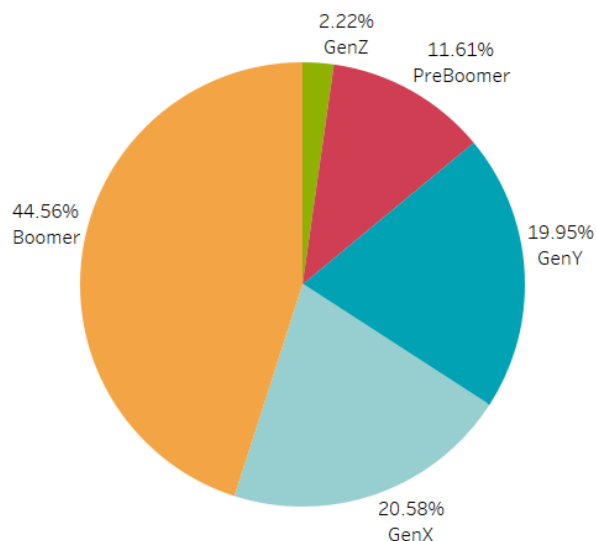


Figure 8: Pie chart of 2018/2019 responses from DDL MTD survey, coloured by age demographic.

In the provided DDL MTD survey data, the demographics are not uniformly distributed, with around 45% Boomers and 2% Gen Z. It is possible that the uneven representation is more representative of the population in Canada, however where possible we used percentage of demographic to allow for more obvious comparisons between age groups.

With reference to the data obtained from Stats Canada, the following warning was present:

The information in this release is self-reported and has not been validated. Social desirability and fear of punishment, both of which are potential sources of bias, may be especially relevant to this analysis. Changes over time in respondents' willingness to admit drug use may be influencing the statistics but remains difficult to measure.

Small sample sizes for some analyses may also have reduced the ability to reach statistical significance. Combining cycles and averaging results across quarters can improve statistical power and the stability of the estimates. As well, not all relevant covariates were available and it was sometimes necessary to use broader categories than would have been desirable.



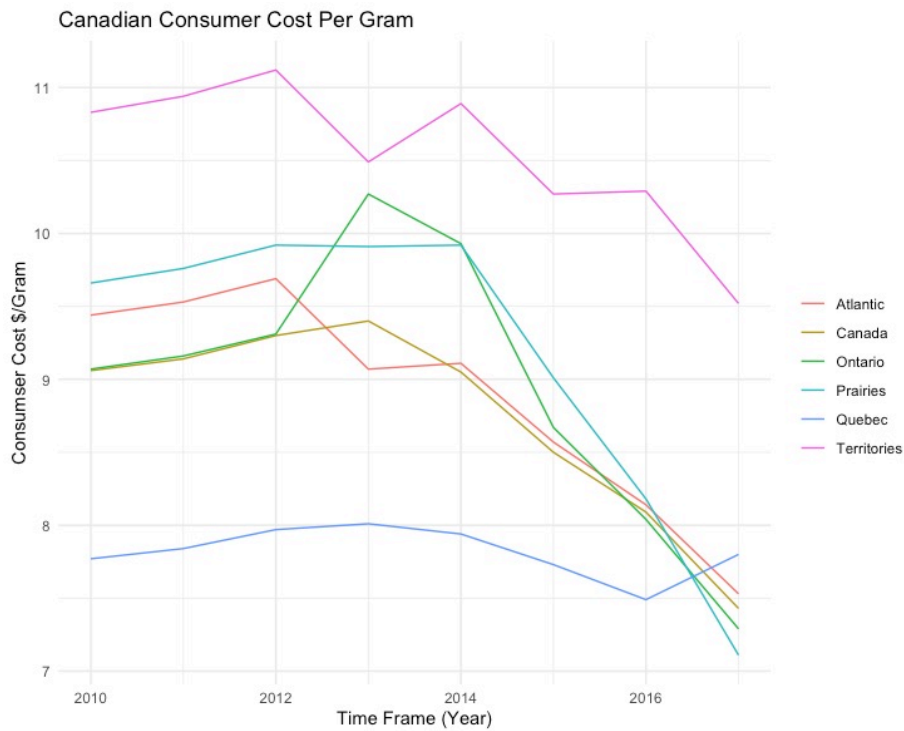


Figure 9: Graph showing price per gram of cannabis for consumers as recorded by Statistics Canada. Legalization happened November 2018

## 2.6 Canadian Consumer and Producer Price variation

From Figure 9 we can see a drop off in prices starting in 2014. From the data the cost per gram for Canadian's dropped 11.7 Percent from 2014 - 2017. With a drop in prices we can ask the question if the Price decreased did the consumption increase. To better understand the correlation between Price per gram and Canadian consumption we will preform a price elasticity analysis.

### 3 Market Concerns

#### 3.1 Data Protection and Internet Privacy

With such a large shared border between Canada and the United States, the laws of one country will unavoidably have a large effect on the other. Recently there have been concerns raised about travel to the U.S., a country where cannabis is not legal nationwide [Cain, 2016]. Whether or not this concern is justified, the data in Figure 10 shows that it is present in 2018 and 2019. The concern for data privacy is high among all demographics, especially for older generations. This may be a reason to focus on education and reassurance of the safety of purchasing cannabis products.

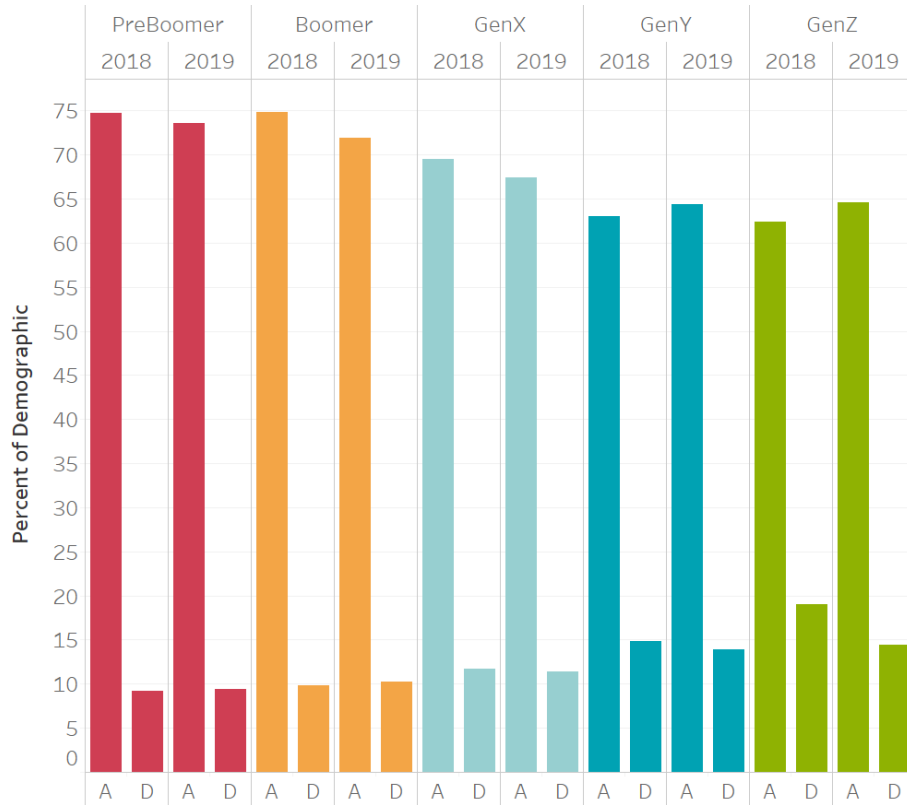


Figure 10: Responses to the statement "Digital Lifestyle-Views on the Internet-I am concerned about data protection and privacy in the Internet" from the Vividata survey [Vividata, 2019]. The bars are coloured by age group, and split by both Response and Year. Note on the X axis that A = Agree, D = Disagree.

### 3.2 Elasticity Analysis

From our elasticity analysis we found the total Consumption (legal & illegal) and Canadian Consumer Cost Per Gram are inelastic. Luckily, consumers do not mind paying a premium to acquire cannabis from legal sources. Customers tend to prioritize convenience and privacy above all. Convenience is difficult to address via marketing but there is an opportunity to generate trust towards cannabis firms.

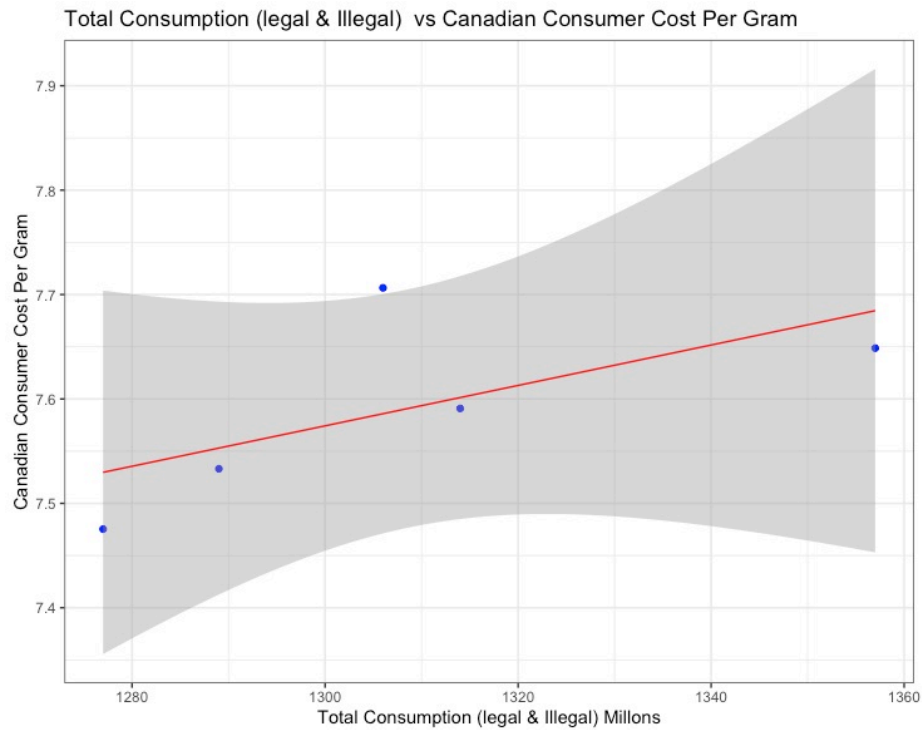


Figure 11: Total Consumption (legal & Illegal) vs Canadian Consumer Cost Per Gram as recorded by Statistics Canada.

The consumer demand in the Canadian cannabis is consistent regardless of price changes therefore focusing on a refined, consistent product line will yield a higher profit margin and the advertising should market these high end products. Since the highest consumption across generations is among millennials, the marketing campaign should be focus on this age group.

## **4 Steps going forward**

### **4.1 Privacy and Trust**

There are several challenges facing the cannabis market that should be addressed. Data and privacy concerns are high and still rising slightly among Millennials and Generation Z. Since Millennials are already a large portion of the consumer base with Generation Z coming of age and are predicted to be an even larger market, it should be considered to run a campaign to generate trust in cannabis brands. Some of the methods to generate trust could involve providing a reliably consistent and quality product, engage customers in two-way communication via social media and incorporate feedback on a regular basis, encourage user-generated content such as allowing users to design packaging/logos/etc, promote trustworthy studies on cannabis and make sure your brand acts responsibly.

### **4.2 Stigma against Cannabis**

There still exists a stigma against cannabis in advertisement, with only 39% of Canadians being net-positive towards cannabis advertisement. According to ASI Inc.'s report, Canadians are primarily concerned about the promotion of cannabis use in ads. Canadians would rather see ads that emphasize social responsibility with regards to cannabis usage while also addressing the effects of cannabis legalization on real-estate. Consider gearing advertisements towards the positive of the cannabis market i.e the job creation from the industry or by promoting the responsible use of cannabis.

### **4.3 Turning Curiosity into Consumption**

In order to succeed in this market, it is paramount that corporations make an effort to shift indifferent consumers to regular consumers. This can be done through clever online campaigns and substantial investments in educational resources about the substance. The overall perception of cannabis is similar to that of tobacco and alcohol so usage should theoretically follow similar trends.

## 5 Appendix

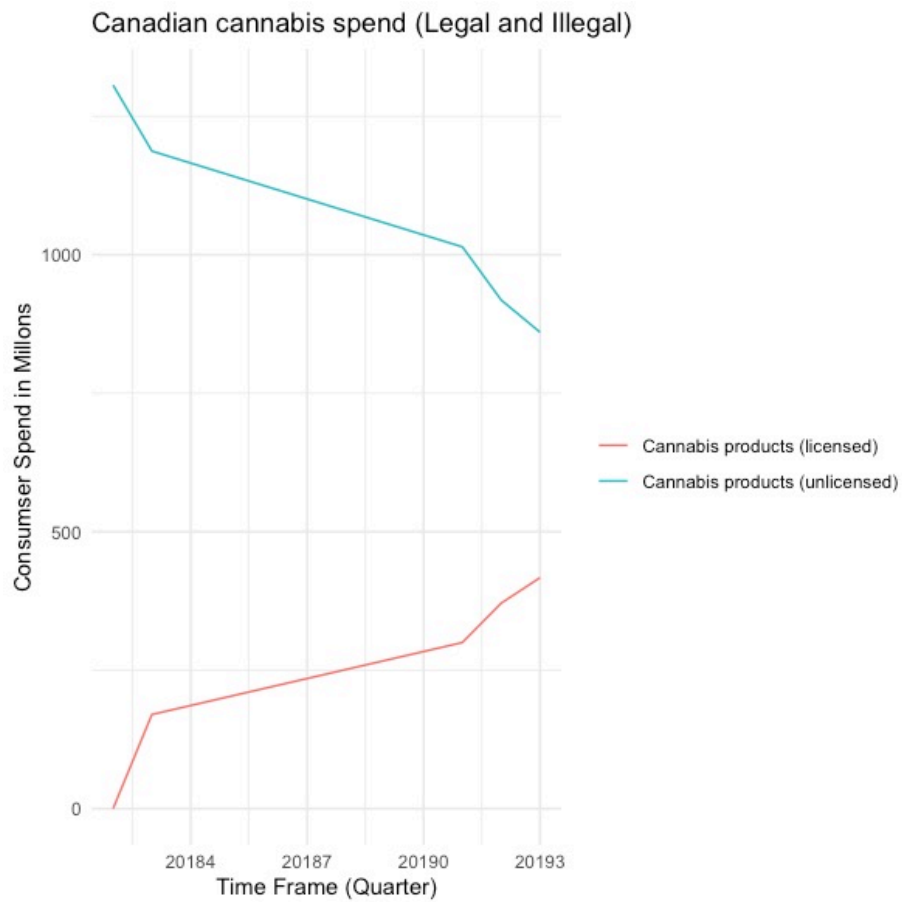


Figure 12: Canadian cannabis spend (Legal and Illegal) as recorded by Statistics Canada.

## References

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