

Cannabis in British Columbia: How Can We Take the High Road?

by

Aaron Bockner

B.A. (Justice Studies), Royal Roads University, 2006

Research Project Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Public Policy

in the

School of Public Policy

Faculty of Arts and Social Sciences

© **Aaron Bockner 2015**

SIMON FRASER UNIVERSITY

Spring 2015

All rights reserved.

However, in accordance with the *Copyright Act of Canada*, this work may be reproduced, without authorization, under the conditions for "Fair Dealing." Therefore, limited reproduction of this work for the purposes of private study, research, criticism, review and news reporting is likely to be in accordance with the law, particularly if cited appropriately.

Approval

Name: Aaron Bockner
Degree: Master of Public Policy
Title: *Cannabis in British Columbia: How Can We Take the High Road?*

Examining Committee: **Chair:** Doug McArthur
Director, School of Public Policy, SFU

Maureen Maloney
Senior Supervisor
Professor

J. Rhys Kesselman
Supervisor
Professor

Josh Gordon
Internal Examiner
Assistant Professor

Date Defended/Approved: March 25, 2015

Partial Copyright Licence



The author, whose copyright is declared on the title page of this work, has granted to Simon Fraser University the non-exclusive, royalty-free right to include a digital copy of this thesis, project or extended essay[s] and associated supplemental files (“Work”) (title[s] below) in Summit, the Institutional Research Repository at SFU. SFU may also make copies of the Work for purposes of a scholarly or research nature; for users of the SFU Library; or in response to a request from another library, or educational institution, on SFU’s own behalf or for one of its users. Distribution may be in any form.

The author has further agreed that SFU may keep more than one copy of the Work for purposes of back-up and security; and that SFU may, without changing the content, translate, if technically possible, the Work to any medium or format for the purpose of preserving the Work and facilitating the exercise of SFU’s rights under this licence.

It is understood that copying, publication, or public performance of the Work for commercial purposes shall not be allowed without the author’s written permission.

While granting the above uses to SFU, the author retains copyright ownership and moral rights in the Work, and may deal with the copyright in the Work in any way consistent with the terms of this licence, including the right to change the Work for subsequent purposes, including editing and publishing the Work in whole or in part, and licensing the content to other parties as the author may desire.

The author represents and warrants that he/she has the right to grant the rights contained in this licence and that the Work does not, to the best of the author’s knowledge, infringe upon anyone’s copyright. The author has obtained written copyright permission, where required, for the use of any third-party copyrighted material contained in the Work. The author represents and warrants that the Work is his/her own original work and that he/she has not previously assigned or relinquished the rights conferred in this licence.

Simon Fraser University Library
Burnaby, British Columbia, Canada

revised Fall 2013

Ethics Statement



The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

- a. human research ethics approval from the Simon Fraser University Office of Research Ethics,

or

- b. advance approval of the animal care protocol from the University Animal Care Committee of Simon Fraser University;

or has conducted the research

- c. as a co-investigator, collaborator or research assistant in a research project approved in advance,

or

- d. as a member of a course approved in advance for minimal risk human research, by the Office of Research Ethics.

A copy of the approval letter has been filed at the Theses Office of the University Library at the time of submission of this thesis or project.

The original application for approval and letter of approval are filed with the relevant offices. Inquiries may be directed to those authorities.

Simon Fraser University Library
Burnaby, British Columbia, Canada

update Spring 2010

Abstract

This study examines how to reduce the harms and enhance the benefits that are produced by cannabis legislation in British Columbia. Criminalization of recreational cannabis aims to decrease demand. However, prior research reveals that this approach has little effect on usage rates. Although there are hazards associated with cannabis use, studies suggest that alcohol and tobacco consumption are more dangerous, yet it is legal to possess those drugs. Furthermore, the status quo allows criminal organizations to capture sizeable tax-free profits, which are frequently used to fund other unlawful activities. Cannabis prohibition also increases violence and elevates risks related to unsafe cultivation and storage. A cross jurisdictional analysis and expert interviews are used to identify and assess policy alternatives. The results indicate that while cannabis legalization is the most preferable option, provincial decriminalization has a greater likelihood of being accepted by government and the public.

Keywords: cannabis; legislation; British Columbia; harms; benefits; alternatives

To Jen, with all my love

Acknowledgements

First and foremost, thank you to my supervisor, Professor Maureen Maloney, for your invaluable mentorship and guidance. I would also like to thank the interview participants, each of whom took time to provide captivating and insightful perspectives on cannabis. Finally, I would like to thank my friends and family for all of their encouragement and support.

Table of Contents

Approval.....	ii
Partial Copyright Licence	iii
Ethics Statement	iv
Abstract	v
Dedication	vi
Acknowledgements	vii
Table of Contents	viii
List of Tables	x
List of Acronyms	xi
Executive Summary	xii
1. Introduction	1
2. Literature Review.....	4
2.1. Socio-Economic Concerns	4
2.2. Public Health and Social Development	11
2.3. Public Safety	14
3. Methodology	15
3.1. Literature Review.....	15
3.2. Cross-Jurisdictional Analysis	15
3.3. Semi-Structured Interviews.....	16
3.4. Limitations	17
4. Cross-Jurisdictional Analysis	17
4.1. Washington	18
4.2. Colorado.....	21
4.3. The Netherlands	22
4.4. South Australia	25
4.5. Portugal.....	27
5. Qualitative Findings	29
5.1. Morality and Ethnicity.....	30
5.2. Young People.....	31
5.3. Comparisons to Alcohol and Tobacco	36
5.4. Current Political Environment	42
5.5. Quality Control.....	45
6. Policy Options	46
6.1. Policy Option One: National Decriminalization	46
6.2. Policy Option Two: Provincial Decriminalization.....	47

6.3. Policy Option Three: Legalization	48
7. Criteria and Measures	49
7.1. Effectiveness	51
7.2. Group Equity	51
7.3. Cost.....	52
7.4. Acceptability	52
8. Policy Analysis	52
8.1. Policy Option One: National Decriminalization	52
8.2. Policy Option Two: Provincial Decriminalization.....	54
8.3. Policy Option Three: Legalization	56
9. Recommendations	58
10. Future Considerations	59
11. Conclusion.....	60
References.....	61
Appendices.....	74
Appendix A: Interview Guide.....	75
Appendix B: Sensible Policing Act	76
Appendix C: Cannabis Regulation Model.....	80

List of Tables

Table 1: Drug Offences in BC, 2004 to 2013	5
Table 2: Drug Charges in BC, 2004 to 2013	6
Table 3: Cannabis Possession Charges in Non-RCMP Jurisdictions, 2011	7
Table 4: Criteria and Measures	50
Table 5: Policy Analysis Summary	58
Table 6: Policy Framework for Cannabis Regulation	81

List of Acronyms

Term	Definition
BC	British Columbia
CDSA	<i>Controlled Drugs and Substances Act</i>
EMCDDA	European Monitoring Centre for Drugs and Drug Addiction
EU	European Union
OCABC	Organized Crime Agency of BC
RCMP	Royal Canadian Mounted Police
SFU	Simon Fraser University
SSCID	Senate Special Committee on Illegal Drugs
THC	Tetrahydrocannabinol
UBC	University of British Columbia
US	United States

Executive Summary

Cannabis legislation in British Columbia produces too much harm and not enough benefits. With the exception of sanctioned medicinal purposes, production, distribution, and possession of cannabis are illegal in Canada. The objective of this policy is to reduce demand. However, research illustrates that this type of approach has little impact on cannabis consumption patterns.

Individuals who are caught possessing cannabis face considerable social costs. These include loss of liberty, diminished employability, financial hardship, community alienation, and travel restrictions. Such costs are especially prevalent in British Columbia, where the number of arrests and charges for possession are higher than in many other Canadian regions.

There are potential harms associated with cannabis use, particularly with respect to young people, respiratory functioning, mental health, and driving. However, studies indicate that alcohol and tobacco consumption is more dangerous, yet those drugs are legal. Furthermore, prohibition allows criminal organizations to control the underground cannabis market and capture lucrative tax-free profits, which are frequently used to fund other illicit activities. The status quo also increases violence and elevates risks associated with unsafe cultivation and storage.

A cross-jurisdictional analysis and expert interviews help to identify policies that will achieve the following objectives: decrease the harms that cannabis laws impose on consumers, improve the capacity of the British Columbia government to address public health and safety risks associated with cannabis, and enhance economic efficiency.

The evaluation presents cannabis legalization as the best of three policy alternatives. Legalization is recommended because it ranks as the most effective option for diminishing the harms and expanding the benefits that are produced by cannabis legislation in British Columbia. However, in the short-term, provincial decriminalization is proposed as it is more likely to be accepted by government and the public.

1. Introduction

Cannabis is a prohibited drug in Canada, as outlined in the *Controlled Drugs and Substances Act (CDSA)*. Although the policy objective for prohibition is to reduce demand, cannabis remains the most commonly used illicit drug in the nation (SSCID, 2002). In British Columbia (BC), recent efforts to decrease consumption have been ineffective as usage rates have changed very little since 2008 (Centre for Addictions Research of BC, 2013; Forum Research Inc., 2014). Furthermore, support for less restrictive cannabis laws is greater in BC than any other Canadian region (Forum Research Inc., 2013).

Despite public support for change and the ongoing lack of success at diminishing demand, the number of persons charged with cannabis possession offences in BC nearly doubled between 2004 and 2013 (Police Services Division, BC Ministry of Justice, 2014). Moreover, BC has the second highest cannabis offence rate among the provinces (Statistics Canada, 2013). Throughout Canada, including BC, cannabis possession offences also account for the majority of all police reported drug crimes (Boyce et al., 2014).

Prohibition of drugs began in Canada with the 1908 *Opium Act* and was primarily based on negative attitudes towards Asians (Carter and MacPherson, 2013). Shortly after, at the Hague Opium Conference of 1911-1912, which was attended by Canadian Prime Minister Mackenzie King (Carstairs, 2006), a recommendation was made to undertake a scientific study on cannabis (Carstairs, 2000, as cited in Taylor 1969). Ten years later, a campaign against cannabis was accelerated by Judge Emily Murphy, whose anti-drug writings were widely distributed across Canada (Carstairs, 1999). In 1922, Judge Murphy published "The Black Candle", in which she referred to cannabis as "poison" and asserted that the following three methods are the only way of overcoming cannabis addiction: abandonment, insanity, and death. In the same book, she cited a Los Angeles Police Chief who described individuals under the influence of cannabis as "... raving maniacs (who are) liable to kill or indulge in any form of violence..." Judge Murphy also portrayed cannabis use as a sinful foreign behaviour that was brought to Canada by Asian immigrants. The following year, in 1923, Canada criminalized cannabis without any parliamentary debate (SSCID, 2002).

Nearly a century later, ethnicity and drug use continues to be an issue in some parts of the country. In BC, South Asians have faced elevated scrutiny by police because of yearly Criminal Intelligence Service Reports that link their community to the illicit drug trafficking market (Harris, 2003, as cited in Bahdi et al., 2010). This issue is also demonstrated in the 2001 Annual Report of the Organized Crime Agency of BC (OCABC), which states “that there is...increasing evidence that Asian Groups are extensively involved in the illicit drug trade, producing locally grown marihuana...” Concerns related to drugs and race are also prevalent in other provinces, including Ontario. For instance, an examination of over 10,000 arrests in Toronto between 1996 and 2001 illustrated that Canadians of African descent were much more likely to be arrested and charged for drug possession than Caucasian Canadians (Owusu-Bempah and Wortley, 2013).

Scientific evidence is beginning to alter prior notions surrounding cannabis use. While consumption of the drug does pose some risks, recent studies show the dangers are lower than previously believed and that cannabis is less harmful than alcohol and tobacco (Carter and Macpherson, 2013). This concept is revealed by examining the health care costs associated with each substance. For example, in 2002, while total health care costs linked to cannabis in BC were approximately \$20 million, aggregate health expenditures were roughly \$600 million for tobacco and \$550 million for alcohol (Rehm et al., 2006). In addition, approximate per user health care costs for these substances in Canada are as follows: \$20.00 for cannabis, \$165.00 for alcohol, and \$820.00 for tobacco (Thomas and Davis, 2009). The Senate Special Committee on Illegal Drugs (SSCID), 2002, also opined that dependency on cannabis is moderate compared to alcohol and nicotine. These findings indicate that the potential health risks with cannabis are lower than alcohol and tobacco. However, cannabis is not a benign substance; under certain circumstances, it can present serious health and safety concerns, particularly with respect to young people, respiratory functioning, mental health, and the ability to operate a motor vehicle.

Since outlawing cannabis does little to deter demand for the drug (SSCID, 2002), an underground market is flourishing, and this has created a major source of funding for organized crime (OCABC, 2001). Consequently, illegal groups that are involved in the

cannabis trade will sometimes engage in violent disputes over market share, which endangers the health and safety of gang members and the public (OCABC, 2001).

In 2007, the federal government introduced a five year initiative called the National Anti Drug Strategy, which aimed “...to prevent use, treat dependency, and reduce production and distribution of illicit drugs” (Government of Canada Department of Justice, undated). Under the plan, the Royal Canadian Mounted Police (RCMP), which is the national police force in Canada, received \$91.4 million to strengthen their ability to address illegal cannabis sales and production. In 2012, the Strategy was renewed for five more years, under which the RCMP is set to receive \$112.5 million to combat illicit cannabis growing operations (Carter and MacPherson, 2013). However, increasing enforcement is unlikely to have the desired effect. Since criminal organizations are very efficient at producing cannabis, and with such lucrative profits at stake, each operation that is destroyed will likely be replaced by another (Easton, 2004). Nonetheless, there continues to be political pressure from the US to keep cannabis illegal. This is because Canada, and especially BC, routinely exports a large of supply of illegal cannabis to the US (Gecelovsky, 2008).

In conjunction with providing a better understanding about cannabis consumption, cultivation, and distribution, the goal of this study is to explore policy options that will reduce the harms and enhance the benefits that are produced by cannabis legislation in BC. In particular, this paper seeks to answer the following research questions: (1) How can the harms that current laws impose on cannabis consumers in BC be decreased?, (2) How can the BC government improve its capacity to address public health and safety risks associated with cannabis?, and (3) What is the best way to enhance economic efficiency in relation to cannabis in BC?

This paper is organized as follows: Chapter 2 reviews prior literature on socio-economic and health and safety issues related to cannabis; Chapter 3 outlines the methodology used in this study; Chapter 4 examines cannabis policies in other jurisdictions; Chapter 5 analyzes themes from five expert interviews; Chapter 6 describes the policy options; Chapter 7 presents criteria and measures for assessing the

options; Chapter 8 evaluates the options; Chapter 9 provides policy recommendations; Chapter 10 discusses future considerations; and Chapter 11 concludes the study.

2. Literature Review

This chapter reviews prior literature on socio-economic and health and safety issues associated with cannabis.

2.1. Socio-Economic Concerns

Enforcing cannabis possession laws in BC is expensive. Between 2002 and 2011, total police and court costs amounted to about \$105 million, with current expenditures being around \$10.5 million annually and yearly spending anticipated to reach \$18.8 million by 2018 (Boyd, 2013). Arrests and charges for possession have also been increasing, and this is illustrated in Table 1, which follows:

Table 1: Drug Offences in BC, 2004 to 2013



British Columbia Crime Trends, 2004 - 2013

Drug Offences

CONTROLLED DRUGS AND SUBSTANCES ACT (CDSA)

Number of Offences	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cannabis: Possession	13,108	12,234	11,952	13,470	13,758	13,284	15,721	16,726	15,303	16,085
Cannabis: Trafficking	2,136	1,840	1,318	1,282	1,163	1,179	1,297	1,255	1,014	981
Cannabis: Importation/Exportation	68	92	66	90	58	23	24	30	18	32
Cannabis: Production	2,787	2,292	1,848	2,117	1,544	1,775	2,084	1,504	1,388	1,150
Cannabis	18,079	16,258	15,184	16,939	16,523	16,261	19,126	19,515	17,723	18,248
Cocaine: Possession	3,440	3,741	4,682	4,428	3,992	2,891	2,642	2,524	2,597	2,631
Cocaine: Trafficking	2,570	2,788	2,808	3,039	2,833	2,064	2,165	1,981	1,738	1,588
Cocaine: Importation/Exportation	38	39	30	39	39	44	50	41	29	21
Cocaine: Production	..	..	..	2	4	3	1	0	0	1
Cocaine	6,048	6,548	7,518	7,508	6,868	5,002	4,858	4,546	4,364	4,241
Heroin: Possession	369	387	515	378	389	347	316	379	508	614
Heroin: Trafficking	173	196	173	151	110	111	131	162	226	259
Heroin: Importation/Exportation	11	12	10	6	10	12	13	6	5	8
Heroin: Production	..	..	..	..	1	0	0	0	0	0
Heroin	553	595	698	535	510	470	460	547	739	881
Other Drugs: Possession	1,422	1,854	1,564	2,689	2,400	1,583	1,831	1,893	1,882	2,162
Other Drugs: Trafficking	423	541	463	510	559	533	536	556	625	689
Other Drugs: Importation/Exportation	379	282	203	235	142	62	74	68	61	127
Other Drugs: Production	0	0	0	56	30	37	43	42	45	26
Precursor/Equipment (crystal meth or ecstasy) ¹⁵	..	..	..	..	..	..	..	11	16	11
Other Drugs¹⁷	2,224	2,477	2,230	3,490	3,131	2,215	2,484	2,570	2,629	3,015
TOTAL CDSA DRUG OFFENCES	26,904	25,878	25,630	28,472	27,032	23,948	26,928	27,178	25,455	26,385

Source: BC Ministry of Justice Police Services Division, 2014

As shown in Table 1, between 2004 and 2013, there was a rise in the number of cannabis possession offences, from 13,108 to 16,085 (Police Services Division, BC Ministry of Justice, 2014). Meanwhile, Table 2 shows the number of cannabis possession charges during the same period.

Table 2: Drug Charges in BC, 2004 to 2013



British Columbia Crime Trends, 2004 - 2013

CONTROLLED DRUGS AND SUBSTANCES ACT (CDSA)

Persons Charged	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Cannabis: Possession	1,854	1,737	1,981	2,471	2,782	3,246	3,626	3,843	3,528	3,620
Cannabis: Trafficking	1,601	1,153	982	1,044	980	905	1,151	931	666	599
Cannabis: Importation/Exportation	30	6	30	8	11	1	1	4	12	0
Cannabis: Production	1,079	825	602	604	506	452	598	361	317	142
Cannabis	4,564	3,721	3,595	4,127	4,279	4,604	5,376	5,139	4,523	4,361
Cocaine: Possession	912	1,012	1,718	1,597	1,549	961	867	848	781	770
Cocaine: Trafficking	2,163	2,368	2,530	2,977	2,589	1,793	1,700	1,574	1,214	1,167
Cocaine: Importation/Exportation	48	10	38	45	6	32	16	7	8	1
Cocaine: Production	..	..	..	7	1	0	0	0	0	1
Cocaine	3,123	3,390	4,286	4,626	4,145	2,786	2,583	2,429	2,003	1,939
Heroin: Possession	86	108	190	157	145	109	105	107	174	197
Heroin: Trafficking	188	229	227	167	96	114	119	136	201	246
Heroin: Importation/Exportation	6	4	4	2	11	4	2	0	2	2
Heroin: Production	..	..	..	..	2	0	0	0	0	0
Heroin	280	341	421	326	254	227	226	243	377	445
Other Drugs: Possession	270	322	414	496	457	411	499	518	562	744
Other Drugs: Trafficking	283	331	305	303	289	277	298	286	258	349
Other Drugs: Importation/Exportation	59	33	23	17	14	11	15	29	15	6
Other Drugs: Production	0	0	0	24	19	14	21	20	15	5
Precursor/Equipment (crystal meth or ecstasy) ¹⁶	..	..	..	..	..	..	..	0	0	0
Other Drugs¹⁷	612	686	742	840	779	713	833	853	850	1,104
TOTAL CDSA DRUG OFFENCES	8,579	8,138	9,044	9,919	9,457	8,330	9,018	8,664	7,753	7,849

Source: BC Ministry of Justice Police Services Division, 2014

Between 2004 and 2013, total charges for cannabis possession increased dramatically, from 1,854 to 3,620 (Police Services Division, BC Ministry of Justice, 2014). Additionally, there were more charges for cannabis possession in jurisdictions that are policed by the RCMP. For example, the following charges per 100,000 people occurred in 2011: 57.9 in Burnaby, 79.1 in Richmond, and 90.8 in North Vancouver (McKnight, 2012). Meanwhile, in Vancouver, which has its own police force, the rate was only 30.3. RCMP areas outside of the Lower Mainland also had an elevated number of charges per 100,000 persons in 2011. For instance, there were 298 within the RCMP patrolled regions of Nelson (the city also has a local police department) while Tofino had 588 (McKnight, 2012). Comparatively, Table 3 presents the total number of charges in jurisdictions that have their own police agencies.

Table 3: Cannabis Possession Charges in Non-RCMP Jurisdictions, 2011

	Number of Drug Charges
Abbotsford	22
Central Saanich	9
Delta	82
Nelson	29
New Westminster	12
Oak Bay	3
Port Moody	3
Saanich	9
Vancouver	203
Victoria	41
West Vancouver	21
Total	434
<hr/>	
Total Cannabis Charges in all of BC, 2011	3,843

Sources: McKnight, 2012; BC Ministry of Justice Police Services Division, 2014

There are roughly 4.5 million residents in BC, and approximately 1.25 million (around 28%) live in the eleven municipalities that have their own police organizations (BC Stats, 2014). However, Table 3 reveals that in the year 2011, only 11% of all cannabis possession charges in BC occurred in regions that have their own police departments. Hence, there was a much higher charge rate in the areas that are policed by the RCMP.

Tables 1 and 2 also show that although arrests and charges for cannabis possession have risen in BC, offences and charges for trafficking, importing, exporting, and producing the drug have declined substantially. This is surprising, especially considering the enhanced funding that the RCMP has been receiving under the National Anti-Drug Strategy since 2007. A potential reason for this contrast is that cannabis production and distribution have decreased. But that seems unlikely as consumption patterns have remained relatively stable in BC. Another possibility is that the RCMP used the funds for other purposes, such as enforcement against cannabis possession, which, if true, would help to explain the drastic increase in offences and charges of that nature. It may also be that the RCMP has become less effective at combating activities associated with illegal cannabis cultivation and distribution. In any case, it appears that despite increased funding, the RCMP in BC is not achieving the policy objective of the National Anti-Drug Strategy, which is to reduce illicit production and distribution of cannabis. Moreover, given that there are many less offences and charges for those activities, it is reasonable to assume that while considerable funds are being spent on supply reduction initiatives, the greatest share of costs are allocated to the enforcement of cannabis possession laws.

Although the goal of cannabis prohibition is to reduce demand, past year cannabis consumption has changed very little in BC; approximately 13% of the population admitted to using the drug between 2008 and 2012, which is somewhat higher than the 10% national average during the same period (Centre for Addictions Research of BC, 2013). This indicates that enforcing cannabis possession laws is ineffective at decreasing demand for the drug, a conclusion that is echoed by The United Kingdom Home Office. In 2014, the agency conducted an international comparative review of drug policies and "... did not find ... any obvious relationship between the

toughness of a country's enforcement against drug possession and (consumption) levels..." Thus, it seems there is policy inefficiency in BC as the province continues to dedicate resources toward enforcement despite evidence that doing so does not reduce consumer demand for cannabis.

Enforcing cannabis possession laws also produces significant social costs. These include intrusion on individual liberty, diminished employability for those with criminal records, financial hardship from paying fines and legal fees, and community alienation resulting from arrest or conviction (Single et al., 2000). Moreover, having a criminal record can restrict ability to travel (Boyd, 2013). It is surprising that the individual consequences for cannabis possession are so high, especially since research suggests that the risks associated with cannabis use are lower than other legal drugs, such as alcohol and tobacco.

In a recent national poll, 46% of respondents in BC supported taxation and legalization of cannabis while 30% favoured decriminalization of small amounts (Forum Research Inc., 2013). This indicates that the majority of people in the province would prefer having cannabis policies that are less strict. In addition, it illustrates that of those who favour reforming the laws, most want the government to regulate cannabis production and sales rather than maintain efforts to diminish the underground market for those activities. Support for moderated laws is also higher in BC than the rest of Canada, where 36% support legalization and 34% favour decriminalization of minor quantities (Forum Research Inc., 2013). Low support for legalization throughout the country could be a holdover from longstanding cultural opposition to the drug, much of which has been linked to morality, racial bias, and misconceptions about the potential risks surrounding cannabis use. Consequently, while support for decriminalization indicates an attitudinal moderation towards consumption, most Canadians do not support having a legitimate cannabis market.

A recent study estimated that recreational cannabis consumers in BC spend \$407 million per year (Werb et al., 2012). Meanwhile, criminal organizations are the chief benefactors as they control 85% of the provincial cannabis market (OCABC, 2001). Consequently, the BC government is unable to collect what could be a substantial

amount of tax revenue on the income and sales that are associated with cannabis. Instead, these lucrative financial benefits are primarily captured by individuals who are involved in organized crime, with the profits often being used to fund other illegal activities “...such as importing heroin and cocaine, violent offences, and money laundering...” (OCABC, 2001).

Evidence that cannabis regulation can produce considerable tax revenue has been illustrated in two nearby jurisdictions. During the first eleven months after Colorado implemented regulation of recreational cannabis, the state generated \$67.6 million in tax revenue and fees (Marijuana Policy Project, undated). Furthermore, the state of Washington, which introduced similar laws about six months after Colorado, generated roughly \$25 million in tax revenue within the first nine months after sales became permissible (Washington State Liquor Control Board, 2015). The reason for the sizeable difference in revenue is that implementation in Colorado has been more rapid, which has resulted in a greater number of recreational cannabis businesses in that region (Hughes, 2014). Nonetheless, it is realistic to assume that as the industry expands in Washington, tax revenue in that state will increase.

Another potential economic benefit of a regulated cannabis market is legal job creation. In the first eleven months after Colorado legalized cannabis, approximately 16,000 new jobs were created directly in the cannabis industry (Marijuana Policy Project, undated). Furthermore, employment in ancillary sectors such as accounting, legal services, real estate, advertising, transportation, construction, property management, security, insurance, and cultivation equipment supply have also been enhanced (Marijuana Policy Project, undated).

As indoor cannabis growing operations require a considerable amount of artificial light, BC is losing a lot of money from producers who steal electricity to decrease their production costs. According to Diplock and Plecas, 2011, the yearly value of this theft is close to \$109.4 million. Furthermore, this illegal activity raises power costs for all consumers because it creates a boost in overall demand for electricity, and as a result, BC has to purchase more expensive power from independent contractors to meet consumer needs (Diplock and Placas, 2011). Hence, “...if all theft of electricity from

growing operations (in BC) were eliminated, the savings to...consumers would be nearly \$154.5 million” (Diplock and Plecas, 2011).

2.2. Public Health and Social Development

Cannabis consumption presents a number of concerns regarding potential impacts on mental health, with adolescents being particularly vulnerable to negative outcomes. Children who regularly use cannabis are more susceptible to reduced brain function and cognitive abilities, which can have an adverse impact on academic performance (California Society of Addiction Medicine, 2009). The risk of dependency on cannabis is also higher for youth; approximately 13% of children between the ages of 12 and 17 become dependent on cannabis, with the highest rate being 17.4% among 13 year olds (California Society of Addiction Medicine, 2009). Comparatively, only 9% of those over the age of 18 “...satisfy the criteria for dependence at some time in their lives...” (California Society of Addiction Medicine, 2009).

Another concern with respect to cannabis consumption is that it can trigger psychosis, including schizophrenia, and those who are genetically predisposed to such illnesses are especially susceptible (Caspi et al., 2005). The risk is also likely elevated for children as “the neurodevelopmental characteristic of adolescence probably creates a more vulnerable circumstance...” (Malone et al., 2010).

Other studies indicate that adolescents who consume cannabis are at an increased risk of being impoverished and unemployed. “However, the findings do not confirm a direct causal relationship between (cannabis) use and poor performance in ... life” (Diplock et al., 2012). This is because biological traits and prior social environment of the individual may contribute to negative social development (Fergusson and Boden, 2008).

Bonn-Miller et al., 2005 and Moore et al., 2007 state that young people who use cannabis are more vulnerable to developing depression and anxiety. But as other

studies have contrasting results, there is inconclusiveness on whether cannabis consumption exacerbates these conditions or if people who have such ailments are more prone to using the drug (Diplock et al., 2012).

A further issue is the potential physical harms associated with cannabis use. For example, since the most common way of ingesting cannabis is to smoke it, many consumers are at an increased risk of developing respiratory ailments (Diplock et al., 2012). However, there are differing opinions about the extent of lung damage that can occur from smoking the drug. Some researchers consider inhaling cannabis to be as harmful as tobacco, others claim that it is less damaging, and some state that it causes more harm (Diplock et al., 2012). Despite this uncertainty within the research, it is probable that smoking cannabis does pose some risk of developing pulmonary problems, with smoking frequency being a likely determinant of the risk level. In 2012, Pletcher et al. found "... that occasional use of marijuana ... may not be associated with adverse pulmonary function ..." but that heavier use does cause an accelerated decline in lung health. This suggests that if cannabis is smoked in moderation the risk of respiratory harm is significantly reduced.

In 2013, Sullivan et al. examined health risks that are linked to cannabis pesticides. The authors discovered "...that chemical residues...on cannabis will directly transfer into the mainstream smoke, and ultimately the end user." They also found that filtering the smoke with a water pipe substantially diminishes the toxicity level. The use of a vaporizer to inhale cannabis may also help to decrease the risk of respiratory problems as it can filter out many of the harmful ingredients (Diplock et al., 2012). But there are still risks with this method as Tetrahydrocannabinol (THC), the main psychoactive component in cannabis, can cause the lungs to become inflamed (Safarian et al., 2005). To address this problem, Sullivan et al., 2013 propose that regulating cannabis in a manner similar to tobacco would allow for better oversight on how pesticides are applied in the cultivation process.

Regulating production could also help to ensure that cannabis is not exposed to mould, a problem that can occur if moist plant matter is not stored properly (Masters, 2011). Mould is also frequently found in illegal grow operations, and this is typically due

to improper ventilation (Plecas et al., 2011). The most common type of mould found in cannabis is *Aspergillus*, and in extreme cases a person may develop Aspergillosis, a chronic disease that can lead to sinusitis, pulmonary infection, and pneumonia (Masters, 2011). Thus, to reduce these risks, safe storage and aeration methods are imperative as contact with mould can cause a number of negative health issues, especially for individuals who have immune systems that are already compromised (Masters, 2011).

Some studies link heart and cardiovascular problems to cannabis use. However, "...there is little evidence to suggest that the outcomes ... are typical or the norm for most users" (Diplock et al., 2012). Research has also shown that consumption of the drug can decrease fertility in both men and women (Diplock et al, 2012). Furthermore, cannabis can potentially cause negative consequences to the immune system, but more so for those whose systems are already weakened (Gargani et al., 2011). With respect to cancer, there are mixed opinions within the scientific community as to whether cannabis use can cause the disease. As a result, further research is required to establish if there is a causal relationship (Diplock et al., 2012).

There has been a longstanding debate about whether cannabis is a gateway drug that leads to the use of more dangerous substances. Research indicates that many people who consume harder drugs do use cannabis beforehand. Yet studies such as Shukla, 2013, which explored perceptions about cannabis and the gateway theory, found that alcohol and tobacco were the first drugs consumed by the majority of participants. Sentiments about a lack of a causal link between cannabis use and subsequent consumption of more dangerous drugs have also been asserted in studies by Hall and Lynskey, 2005 and Fergusson et al, 2005. In addition, Diplock et al., 2012 claim that while "... marijuana users have an increased likelihood of continuing on to other illicit drugs ... this may be more of a result of (pre-existing circumstances) of the user." To that end, genetic predisposition and lifestyle may help to provide a better understanding about cannabis consumption preceding the use of other drugs (Agrawal, et al., 2007).

2.3. Public Safety

A major concern with cannabis use is motor vehicle operation, and “... there appears to be a strong consensus that marijuana has a negative and potentially harmful effect on driving” (Diplock et al., 2012). However, while most researchers agree that the drug causes psychomotor dysfunction, there is a lack of agreement on the extent of impairment that it can cause. This is because a given amount of THC will not have the same affect on every person. Consequently, the degree of intoxication will often depend on individual tolerance, which usually coincides with frequency of use and method of ingestion (Armentano, 2013).

Armentano, 2013 maintains that studies on cannabis use and traffic accident risk are inconsistent. For example, a 2001 report by Lowenstein and Koziol-McLain declared that cannabis use on its own does not elevate crash risk but that such risk is increased when it is used in conjunction with alcohol. In contrast, Bedard et al., 2007 found that cannabis use on its own does enhance the risk of getting into a car accident. But despite this inconclusiveness, there appears to be accord that cannabis can cause impairment and that those who operate a motor vehicle while under the influence of the drug may, in certain circumstances, be at an increased risk of getting into a traffic accident. Thus, in the event that a policy change leads to less restrictive cannabis possession rules, a reliable intoxication screening mechanism will be essential. A dependable test would also be beneficial at present, particularly since a recent study discovered that next to alcohol, cannabis was the most common substance found among a random sample of 2,513 drivers in BC, with roughly 3% having the drug in their system (Beasley and Beirness, 2012).

Illicit cannabis cultivation also presents a number of public safety risks, one of which is violence. In BC, the illegal cannabis market has been linked to homicides, armed confrontations, drive-by shootings, home invasions, and extortion (Watts et al., 2009). Moreover, there are dangers related to the large amount of power that is needed for indoor cultivation, especially since many grow operations run on electrical systems that have been erroneously installed. As a result, these sites are highly susceptible to hazards such as fire, shock and electrocution (Plecas et al., 2011).

3. Methodology

This section outlines the research methodologies that help to identify, and find solutions to, the policy problem, a process that involves answering the following research questions: (1) How can the harms that current laws impose on cannabis consumers in BC be decreased?, (2) How can the BC government improve its capacity to address public health and safety risks associated with cannabis?, and (3) What is the best way to enhance economic efficiency in relation to cannabis in BC?

The primary research for this study consists of semi-structured interviews with experts who have specialized, professional knowledge about cannabis. Secondary methods include a general literature review and cross-jurisdictional analysis.

3.1. Literature Review

This portion of the study examines prior literature on the legislation, enforcement methods, public health and safety concerns, and socio-economic considerations associated with cannabis in BC. The research is drawn from academic journals, government and non-profit agency websites, newspapers, magazines and books.

3.2. Cross-Jurisdictional Analysis

In this section, policy models from other democratic jurisdictions, with similar cultural traits to BC, are analyzed. The objective with this process is to establish potential policy alternatives that will reduce the harms and enhance the benefits that are produced by cannabis legislation in BC. Information for this segment of the study was collected from academic journals, government and non-profit agency websites, newspapers, magazines and books.

The first regions examined are the US states of Washington and Colorado, two areas that recently legalized the sale of recreational cannabis. The next analysis is of the Netherlands, a country which has employed a written policy of non-enforcement

regarding the sale and possession of small amounts of cannabis since 1976. Next, South Australia is inspected as it was the first Australian state to decriminalize small quantities of cannabis. Lastly, the policy framework in Portugal is reviewed, where all drugs, including cannabis, were decriminalized in 2001.

3.3. Semi-Structured Interviews

Interviews were conducted with five professionals; a criminologist, a drug policy expert, an economist, a Non-Commissioned Officer from a BC police agency, and a psychologist. In a professional capacity, each participant has specialized knowledge about cannabis, and this allowed them to provide insight on policy options that aim to reduce the harms and enhance the benefits that are produced by cannabis legislation in BC.

All interviewees were initially contacted by email with a description of the study and a request to participate. Upon acceptance of an invitation, the interview guide and consent form were sent. The interviews occurred in-person or by telephone.

To analyze the interview transcripts, the six step thematic analysis process described by Braun and Clarke, 2006, is used. The order of the technique is as follows: (1) become familiar with the interview data by reading the entire transcript, without coding, (2) extract codes by identifying words and ideas that form patterns, (3) sort the various codes and place them into possible themes, (4) review the preliminary themes to determine whether any should be eliminated or if any can be divided into more than one theme, (5) define and refine the themes to describe how they relate to the research question, and (6) produce the final written thematic analysis.

A thematic analysis was chosen for this study for its ability to highlight similarities and differences across data sets and because of its suitability to inform policy development (Braun and Clarke, 2006).

3.4. Limitations

This study has a number of limitations. First, as the interview participant sample is small, the data cannot be generalized to represent the majority of those who have specialized, professional knowledge about cannabis. In particular, none of the participants endorsed the current legal framework surrounding cannabis in BC. Thus, there might be a lack of perspective on the status quo. Moreover, as all of the interviewees are Caucasian males, there is a limitation in terms of being able to determine whether ethnicity and gender have any influence on attitudes or opinions related to cannabis in BC.

There are also limitations with using a thematic analysis to interpret the interview data. Other methods, such as content and discourse assessment, can present divergent results by contextually interpreting specific language that is used.

Another methodological constraint is that the cross-jurisdictional analysis contains only five regions. Hence, there might be policy alternatives from other jurisdictions that could help to reduce the harms and enhance the benefits that are produced by cannabis legislation in BC. Furthermore, since cannabis legalization policies were only recently implemented in Washington and Colorado, there is less data on policy-related outcomes in these jurisdictions than the Netherlands, South Australia, and Portugal.

Lastly, in doing a comprehensive examination of the numerous societal and governmental concerns associated with recreational cannabis in BC, the extent and depth to which this study can investigate each issue is limited.

4. Cross-Jurisdictional Analysis

This chapter examines cannabis policies in other jurisdictions to help identify potential alternatives for BC.

4.1. Washington

In December 2011, a petition with 355,000 signatures, which was well above the minimum requirement of 241,153, was submitted to the Washington state government to add a cannabis legalization measure on the ballot for the next election (Connelly, 2011). The measure was accepted, and on November 6, 2012, Washington voters passed Initiative 502, legalizing the sale of recreational cannabis. In doing so, Washington became one of the first contemporary jurisdictions in the world to regulate the sale of the drug (Kilmer et al., 2013); the state of Colorado passed a similar initiative on the same day (Sensible Colorado, 2013).

The new law, which came into effect on December 6, 2012, "... made it legal for anyone aged 21 or older to possess up to one ounce of marijuana, 16 ounces of marijuana infused product in solid form, or 72 ounces of marijuana-infused product in liquid form" (Kilmer et al., 2013). Oversight and licensing for retail cannabis are managed by the Washington State Liquor Control Board (Kilmer et al., 2013).

Under US federal law, the possession and sale of cannabis remains illegal. However, federal Deputy Attorney General James Cole said that the US Department of Justice will not interfere with state legalization of recreational cannabis, as long as such activity does not occur outside of the regulated system, does not divert to other states, access to minors is prohibited, and revenue from sales is thoroughly monitored (Cole, 2013). However, the illegality of cannabis at the US federal level, and in other states, is an issue in relation to Canada, especially for BC. This is because "...BC presents the largest source of Canadian marijuana for the US market..."; roughly 90% of the provincial crop is exported south of border, which is a major concern for US law enforcement agencies that operate in jurisdictions where cannabis remains unlawful (Gecelovsky, 2008). Consequently, the Canadian federal government is subject to a substantial amount of US political pressure to keep cannabis illegal (Gecelovsky, 2008).

In addition, the jurisdictional inconsistency within the US could pose an enhanced risk for Canadians with respect to travel. This is because under U.S. federal law, "... admission of past marijuana use or ... intent to buy or smoke marijuana in the future..." can result in an entry ban (Lus, 2014). According to Lus, 2014, Blaine, Washington

lawyer Len Saunders handles two to three entry ban cases per month involving Canadians who admit to past cannabis use while at a border crossing. Lus, 2014 also states that Mr. Saunders anticipates having more business of this type now that Washington has legalized the sale of recreational cannabis.

Between 1986 and 2010, it is estimated that Washington spent \$300 million on enforcement of cannabis possession laws, which included 240,000 arrests (Levine et al., 2012). Interestingly, 129,000 of those arrests and \$200 million of the enforcement costs occurred after 2001 (Levine et al., 2012). In addition, cannabis possession arrest rates for African-Americans, Hispanic-Americans and Native-Americans were all consistently higher than the rate for Caucasian-Americans (Levine et al., 2012). With respect to consumption patterns, African and Hispanic-Americans used cannabis less than Caucasians while Native-Americans consumed the drug at a slightly higher rate than White-Americans (Levine et al., 2012). Thus, as with Canada, this illustrates that there has been racial bias in enforcing drug possession laws in the state of Washington.

In 2011, 800,000 Washington residents reported that they had consumed cannabis in the past year (Kilmer et al., 2013). Since the population of Washington was approximately 6.75 million at that time (State of Washington Office of Financial Management, 2013), this means about 12% of the population admitted to using cannabis in the year prior to legalization. However, it is difficult to verify whether the self-reported data regarding cannabis use was accurate at that time as the drug was still illegal. To that end, studies confirm there is a risk of under-reporting when asking about illicit behaviour because some people will likely be reluctant to admit to current or past illicit drug use (Tyler and Simmons, 2014; Tjepkema, 2004; Harrison and Hughes, 1997). Nevertheless, the self-reported rate in Washington does demonstrate cultural similarity with BC as cannabis consumption patterns were essentially the same in the two jurisdictions during 2011.

The 2014 UN World Drug Report argues that legalization in Washington, and Colorado, may lead to an increase in cannabis use. In making this claim, the report states that legalization will probably reduce production costs, which will lead to a price decrease and a subsequent increase in demand. It is also possible that certain people

will be more willing to try cannabis. This is because legalization removes the risk of criminal punishment and likely increases access to the drug for some individuals. However, since patterns of use tend to rely on self-reporting, it is also possible that legalization will compel a greater number of existing consumers to report using the drug. Thus, in the event that there is a reported rise in usage, it will be difficult to establish whether it is the result of an increase in consumption or enhanced willingness to admit to using cannabis. One way to control for this might be to ask current consumers about their usage patterns both before and after legalization. Doing this could also help to verify whether the reported pre-legalization consumption rates are accurate.

To address driving while under the influence of cannabis, *section 46.61.502* of the *Revised Code of Washington* declares that an offence is committed if a "...person has, within the last two hours after driving, a TCH concentration of 5 (nanograms per millilitre of blood) or higher." In addition, *section 46.04.586* specifies that the measurement is to be of delta-9 THC, the main psychoactive ingredient in cannabis, and not carboxy THC, which is a benign component of the drug (Revised Code of Washington, 2012). However, critics of the law question whether this limit is an accurate measure of impairment. This is because scientific evidence relating to cannabis and traffic accident risk is not conclusive and because THC levels can remain elevated in heavy users for longer than two hours (Rahn, 2012).

Another potential concern that arose is that the prevalence of THC among Washington drivers increased after cannabis was legalized. A 2014 study by Couper and Perterson established that the existence of delta-9 THC in those who were suspected of impaired driving in Washington went up by approximately 6% between 2012 and 2013. But according to Bob Calkins of the Washington State Patrol, blood testing of drivers by police has also risen since cannabis was legalized, which means there has not necessarily been an increase in the number of people driving while intoxicated by the drug (Johnson, 2013).

4.2. Colorado

In November 2012, voters in the state of Colorado legalized recreational cannabis by passing Amendment 64, which permits those aged 21 and older to possess a maximum of one ounce of the substance and allows individuals to grow up to six plants for personal use (Rocky Mountain High Intensity Drug Trafficking Area, 2014). Although this differs from Washington, where a licence is needed for any amount of cultivation, a state licence is required in Colorado for production that exceeds the six plant limit (Garvey and Yeh, 2014). Prior to legalization, the penalty for possessing up to one ounce of cannabis was a \$100 fine, but a conviction for the offence still resulted in a criminal record (Levine, 2012).

From 1986 to 2010, there were approximately 210,000 arrests for cannabis possession in Colorado, with 108,000 occurring after 2001 and the majority of arrestees being 25 years of age or younger (Levine et al., 2012). Furthermore, like Washington, African and Latino-Americans were arrested more frequently than Caucasians, despite lower cannabis usage rates among the former two groups (Levine et al., 2012). Thus, this also demonstrates a similarity with Canada in terms of ethnic bias and the enforcement of drug possession laws.

The cost of enforcing cannabis possession laws was approximately \$33 million in Colorado during the 2005 to 2006 fiscal year (Miron and Waldock, 2010). However, it is evident that enforcement had minimal impact reducing cannabis use as annual consumption hovered between 10% and 11% of the population from 2003 to 2007 (Gettman, 2009). Like Washington, this illustrates a cultural resemblance to BC regarding prevalence of cannabis use.

The THC limit while driving in Colorado is 5 nanograms per millilitre of blood (National Organization for the Reform of Marijuana Laws, undated), which is the same as Washington state. However, the law differs in that Colorado drivers can provide evidence in court to show they were not impaired despite being above the limit, a legal standard which is referred to as permissive inference (Fuchs, 2013). Interestingly, since recreational cannabis was legalized in Colorado, the number of drivers who tested positive for cannabis and were involved in fatal crashes dropped from 8.9% in 2011 to

5.7% in 2013 (Colorado Department of Transportation, 2013). This is surprising, especially considering that there was an increase from 2009, the same year medicinal cannabis was legalized in Colorado, until 2011 (Colorado Department of Transportation, 2014).

A possible explanation for the diminished presence of THC among drivers involved in fatal crashes is that there was a drop in consumption after recreational cannabis was legalized. However, the number of registered medical marijuana patients rose between 2011 and 2013, from 82,089 to 110,979 (Colorado Department of Public Health and Environment, 2013). Furthermore, a recent study prepared for the Colorado Department of Revenue states that between 2011 and 2014 there was an increase in the number of past year recreational cannabis users, from approximately 549,000 to 686,284 (Light et al., 2014). These figures suggest that the mere existence of THC in a driver does not establish a causal link between consumption of the drug and enhanced traffic accident risk. Thus, other factors that vary according to the individual, such as the driver's THC level and frequency of use, should also be assessed (Balko, 2014).

4.3. The Netherlands

The coffee shop policy model in the Netherlands stemmed from a hypothesis that the gateway between cannabis and harder drugs is the result of socio-economic factors, and thus separating the market would reduce contact between cannabis users and those who consume and sell more dangerous substances (MacCoun, 2011). This policy, which was implemented in 1976, did not actually legalize cannabis. Instead, the federal government generated an official document declaring that violations involving the possession or sale of up to 30 grams of cannabis would not be enforced (MacCoun, 2011). Subsequently, in the 1980s, "...a system of 'coffee shops' evolved in which the purchase of small quantities of cannabis by adults was informally tolerated and then formally permitted in shops that were licensed" (Reinarman et al., 2004). The government also set guidelines that forbade coffee shops from advertising and from selling cannabis to anyone under the age of 16 (MacCoun, 2011). Those policies remained unchanged until 1995, at which time the government, in response to internal and foreign political pressure, lowered the allowable possession level to 5 grams and set

a 500 gram supply limit for coffee shops (MacCoun, 2011). The objective of this was to thwart drug tourists from purchasing larger amounts of cannabis and bringing it back to their home countries (Dolin, 2001). The following year, in 1996, the Netherlands government also increased the legal cannabis purchasing age to 18 (MacCoun, 2011).

A harsher measure that sought to combat the problems associated with drug tourists was put forth by the Dutch government in 2011. Under the new scheme, coffee shops would be prohibited from selling cannabis to non-citizens (MacCoun, 2011). However, the initiative received mixed support throughout the country, and in 2012, a new federal coalition government permitted municipalities to decide whether to adopt the policy (Rolles, 2014). Consequently, there is now substantial inconsistency across the country; larger cities that have the majority of coffee shops, such as Amsterdam and Rotterdam, have not implemented the new policy, but a number of border towns did adopt it (Rolles, 2014).

Despite these regional contradictions, there is a shared national problem; because the government has never sanctioned or regulated cannabis production, cultivation is done on the black market, and it frequently involves criminal organizations (Rolles, 2014). This is similar to BC, where cultivation is also frequently managed by criminal organizations.

In 2009, 7% of the Dutch population had used cannabis in the past year, which was an increase from the average of 5.5% between 1997 and 2005 (van Laar et al., 2011). But van Laar, 2011 notes that because the survey techniques for 2005 and 2009 were dissimilar, the variation is "...more likely (a reflection of) methodological differences rather than actual changes...in drug use." Comparatively, the European average for annual cannabis consumption is approximately 5% (United Nations Office on Drugs and Crime, 2011). Furthermore, many countries within close proximity to the Netherlands have similar or higher usage rates (EMCDDA, 2014), which is surprising considering cannabis rules in Holland are less restrictive than most European nations. These findings seem to suggest that there is little correlation between the legality of cannabis possession and rates of consumption. However, it is also conceivable that factors other than law enforcement, such as cultural differences, have an influence on patterns of use

in the various nations. In that sense, it is possible that certain cultures may be more prone to using the drug than others.

With respect to harder drugs, the number of 15 to 34 year olds in the Netherlands who had ever tried cocaine and amphetamines between 1998 and 2008 was close to or lower than many other European countries (MacCoun, 2011). Although this does not confirm that the policy objective, which was to separate the cannabis market to reduce consumption of harder drugs, has been achieved, it may indicate that consumption levels for more dangerous substances are not amplified by lenient cannabis rules.

In 2008, the annual value of the domestic cannabis market in the Netherlands was estimated to be between \$372 million and \$728.5 million (Kline, 2012). In the same year, the government collected \$520 million in tax revenue from the coffee shops, on total domestic and foreign sales of over \$2.6 billion (Kline, 2012). Given the prevalence of cannabis consumption in BC, this illustrates an opportunity for the provincial government to significantly enhance its yearly tax revenue.

In 1995, the per capita cost of drug law enforcement in the Netherlands was \$27.00 (Common Sense for Drug Policy, 1998). In 2002, it was estimated that the yearly cost of drug enforcement in Canada was between \$700 million and \$1 billion (SSCID, 2002). As the total Canadian population was about 30 million at that time (Statistics Canada, 2014), the per capita drug enforcement cost was between \$23.00 and \$33.00 (700 million/30 million and 1 billion/30 million). With a mean of roughly \$26.00, it appears that Canadian per capita expenditures on drug enforcement were almost the same as the Netherlands, which is surprising considering that cannabis laws in Canada are stricter. A potential explanation for this is that the Netherlands spent more on enforcement against other drugs. Alternatively, it is possible that the Dutch regulatory rules for cannabis possession and sales are costly to enforce. Nonetheless, a substantial portion of any monitoring costs are probably negated by the large sum of cannabis related tax revenue that is collected by the Dutch government each year.

More recently, the only projection of public drug related expenditures in the Netherlands is by Rigter, 2006, and although it states that total enforcement costs in 2003 came to approximately 16 million Euros (roughly \$22.8 million Canadian), the

methodology and results have been questioned by other researchers (EMCDDA, 2014). Thus, due to those limitations, and a lack of government record keeping, recent public drug related costs in the Netherlands are uncertain, (EMCDDA, 2014).

Under *Article 8* of the 1994 Dutch *Road Traffic Act*, it is illegal to drive a motor vehicle while impaired by a drug (Government of the Netherlands, undated). However, aside from alcohol, defined legal limits for drug concentrations and driving do not exist in Holland (van Laar, 2011). This is particularly surprising in the context of cannabis given how long they have been employing moderate policies for that substance. It is also surprising because next to alcohol, THC is the most prevalent substance found among Dutch drivers; nearly 1.7% of motor vehicle operators use it as a standalone drug, which is slightly above the European average of 1.3% (Institute for Road Safety Research, 2011). Additionally, another 0.4% of drivers in Holland consume THC in conjunction with alcohol (Institute for Road Safety Research, 2011). Nevertheless, change does appear to be looming; a bill to amend the Act and add concentration limits for other drugs, including cannabis, was recently introduced, and it is expected to take effect in the near future (Government of the Netherlands, 2014). In developing the bill, Dutch ministers followed the recommendations from a recent study (Government of the Netherlands, 2014) by Verstraete et al., 2011, which proposes a level of THC concentration between 3 and 5 nanograms per millilitre of blood.

4.4. South Australia

Possession of small amounts of cannabis for personal use is decriminalized in some Australian jurisdictions (National Cannabis Prevention and Information Centre, 2013), and in 1987, South Australia was the first state in the nation to decriminalize small quantities of the drug. The rationale was that it would save money and that the potential harms from cannabis use were thought to be lower than the harms associated with criminal conviction (Single et al., 2000).

Currently, any individual who is found with up to 100 grams of cannabis, 20 grams of hashish, 1 non-hydroponic plant, or any cannabis smoking equipment faces a fine ranging from \$50 to \$150, with 60 days to pay (National Cannabis Prevention and

Information Centre, 2013). For the purpose of this analysis, however, the South Australian model is referred to as pseudo-decriminalization. This is because the policy “...does not represent a complete decriminalization of personal cannabis use...” as failure to redress the penalty results in a criminal conviction (Single et al., 2000). Such an approach likely has negative consequences for individuals who are unable to afford the fine. As a result, the policy appears to favour those who have greater socio-economic status.

There was a rise in the number of fines in South Australia “...from around 6,000 in 1987/88 to approximately 17,000 in 1993/94...” (Single et al., 2000). However, according to Single et al., 2000, this was not a reflection of increased usage but rather was the result of police agencies shifting from occasional use of discretionary caution towards recording all minor possession offences. Additionally, studies have shown that although consumption in South Australia has risen since pseudo-decriminalization, the increase has been similar to other Australian states, including those that have more prohibitive policies (Single et al., 2000). For example, approximately 11% of South Australians use cannabis, whereas in Queensland, a jurisdiction without any form of decriminalization, 10.5% of the population consumes the drug, placing both regions near the national average of 10% (Australian Institute of Health and Welfare, 2011).

South Australia has roughly 1.7 million residents while Queensland has around 4.7 million people (Australian Bureau of Statistics, 2014). But despite similar consumption patterns, the arrest rate for possession in Queensland is significantly higher. During the 2012 to 2013 fiscal year, there were 16,331 arrests for cannabis possession in Queensland and 1,037 in South Australia (Australian Crime Commission, 2014). This indicates that stricter punitive measures have little effect on decreasing cannabis usage rates. Moreover, the figures in Queensland resemble the numbers in BC. As noted earlier, in 2013 there were 16,085 arrests for cannabis possession in the province, which is nearly identical to the number of arrests in Queensland at that time. The populations are also alike, as BC has approximately 4.5 million residents (BC Stats, 2014). Consequently, the enforcement methods in Queensland and BC appear to be ineffective as cannabis consumption rates in those areas are comparable to the pseudo-decriminalized jurisdiction of South Australia.

The South Australian scheme has also generated cost savings. Brooks et al., 1999 reports that during the 1995 to 1996 fiscal year, the government spent approximately \$1.2 million on enforcement and received \$1.7 million in revenue from fines. Meanwhile, the researchers claimed that if pseudo-decriminalization was not in place, enforcement costs would have been around \$2 million while revenue from fines would only have amounted to about \$1 million.

In South Australia there is a zero tolerance policy with respect to THC level and operating a motor vehicle (Government of South Australia, 2012), and in 2006 the government introduced random roadside saliva testing to detect the presence of the drug (Thompson, 2008). With this test, an initial screening produces a result in approximately five minutes, and if positive for any concentration of THC, the driver must go with the police officer to a drug bus or police station and provide a second oral sample for testing (Government of South Australia, Undated). If the second test returns positive, a portion of that fluid is given to the driver "...and the rest is sent to a police laboratory for a more accurate test" (Mallick et al., 2007). If this final screening, which takes a few weeks to complete, is also positive, the individual will be charged with impaired driving (Government of Australia, Undated).

Of 43,838 drivers who were randomly screened in the fiscal year of 2009 to 2010, 602 tested positive for THC (Littlely, 2012). In the 2010 to 2011 financial year, 42,309 were randomly screened, with 527 testing positive for THC (Littlely, 2012). This means that approximately 1.2% to 1.3% of all randomly screened drivers tested positive for THC from mid 2009 to mid 2011 (Littlely, 2012). However, according to Mallick et al., 2007, as "...there are considerable gaps in the...evidence regarding the accuracy and effectiveness of (saliva testing)...it is vital that (more) research be undertaken to better inform the implementation of future countermeasures."

4.5. Portugal

Portugal decriminalized all drugs in 2001, including cannabis. The objectives of this policy were to reduce economic and social costs associated with the criminal justice system, to deter drug use, and to encourage dependent users into treatment (Hughes

and Stevens, 2010). Possession of a substance is limited to a supply that lasts for ten days, which for cannabis is set at two and a half grams (Hughes and Stevens, 2010). While possession above that amount is a criminal offence, possession of two and a half grams or less will result in a police referral to a local Commission for the Dissuasion of Drug Addiction, at which the motivations for and circumstances surrounding the offence are discussed (Hughes and Stevens, 2010). The purpose of this process is to determine whether an offender is a non-dependent or dependent user, and then to decide if the individual should be sanctioned (e.g. community service, fine, suspension of a professional licence) or whether the person should be compelled to enter into a treatment program (Hughes and Stevens, 2010). As a result, although the Portuguese model removed criminal sanctions for possessing small amounts of cannabis, the framework still allows the government to either penalize consumers or compel them to participate in therapy that aims to alter their behaviour.

While figures for government spending related to cannabis in Portugal are difficult to find, there is data on expenditures for all drugs. In 2000, which was one year prior to decriminalization, the government spent over 100 million Euros on drug policy, of which 24 million Euros was for law enforcement (van Beusekom et al., 2002). More recently, the Portuguese government has not reported specific expenditure trends, such as the proportion of budgetary spending that is allocated to enforcement (EMCDDA, 2014). However, in 2008, total drug policy costs were significantly lower than they had been before decriminalization, down to \$77.5 million (US), which is about 67.5 million Euros (Russoniello, 2012).

The prevalence of lifetime cannabis consumption among 15 to 64 year olds in Portugal rose from 7.6% in 2001 to 11.7% in 2007 (Santos et al., 2012). But this was not necessarily representative of an increase in consumption as decriminalization may have enhanced willingness to report usage (Hughes and Stevens, 2010). Furthermore, between 2001 and 2005, Portugal had the lowest rate of lifetime cannabis use in the European Union (EU) (Greenwald, 2009). In 2006, the lifetime consumption rate in Portugal was 8.2%, which surprisingly was only slightly higher than the past year EU average of 7.1% (Greenwald, 2009). This could indicate that less strict laws have little effect on rates of consumption. Alternatively, it could be the result of cultural differences

throughout Europe. In any event, as patterns of regular cannabis use in Portugal changed very little between 2001 and 2007, with past year consumption rising from 3.3% to 3.6% and past month consumption remaining at 2.4% (Santos et al., 2012), it appears that decriminalization has not led to a usage increase.

The legal limit in Portugal for driving and THC is zero for blood and 50 nanograms per millilitre of urine (EMCDDA, 2007). Drivers who are suspected of drug impairment can be required to take random roadside saliva or sweat tests (Hughes, 2007). In the event that the initial test is positive, a subsequent blood or urine analysis is conducted at a health facility (Hughes, 2007).

A 2012 study by Costa, et al. discovered that alcohol was the most common substance found among Portuguese drivers involved in fatal traffic accidents, followed by opiates and then cannabis. Thus, the authors conclude that while alcohol requires significant consideration with respect to road safety, "...the presence of illicit drugs...in road traffic accidents should deserve further attention and supervision."

5. Qualitative Findings

Semi-structured interviews were conducted with the following five experts who have specialized, professional knowledge about cannabis: (1) Neil Boyd, Director of the School of Criminology at SFU, (2) Donald MacPherson, Executive Director of the Canadian Drug Policy Coalition and Adjunct Professor at SFU, (3) Stephen Easton, Professor of Economics at SFU, (4) a Non-Commissioned Officer from a police agency in the Lower Mainland region of BC (who is hereinafter referred to by the pseudonym of "Officer Jones"), and (5) Zach Walsh, Co-Director of the Centre for the Advancement of Psychological Science and Law and Associate Professor in the UBC Department of Psychology.

5.1. Morality and Ethnicity

A prominent theme that arose during the interviews was morality in relation to cannabis consumption. In response to being asked why cannabis possession became illegal in Canada, Officer Jones stated that “the government of the time, or thinking of the time, was that it was evil.” Furthermore, in reply to the same question, most participants mentioned that in the early 1900s there was a negative shift in public perception about the drug, suggesting that Canadians began to view cannabis use as a dissolute behaviour.

When talking about why recreational cannabis continues to be prohibited in Canada, Professor Easton stated:

Because I think there's a moral imperative that says this stuff is bad for you, it's bad for children, bad for adults, and we ought not to do it. I think it's a holdover from old morality plays.

In addition, while discussing problems that exist with the current legal framework, Professor Boyd said:

I don't see it as a moral issue. I really can't see saying to somebody, for example, 'this person smokes tobacco, that's not morally wrong. You smoke cannabis, that's morally wrong.' It just doesn't add up for me.

These comments illustrate a consensus among the interviewees that morality had, and continues to have, considerable influence on policy surrounding recreational cannabis in Canada. Such comments might also suggest that the sinful portrayal of cannabis by Judge Emily Murphy, and others, in the early 1900s, influenced the decision to prohibit the drug in Canada.

Most participants also mentioned ethnicity in connection to banning cannabis, which echoes the published material of Judge Murphy, who considered cannabis consumption to be an immoral foreign behaviour. For example, Professor Walsh noted:

The reason (cannabis) is illegal...is...tied to racism and social control...Cannabis is identified early on with ethnic minorities and suspect classes, and...making it illegal allowed for the control of those classes...Later, in the 70s and 80s, it became identified with counterculture movements. So to the extent that political forces were at odds with those movements, it was convenient to maintain a prohibition on cannabis...I think it's been one of the most clear-cut mistakes of modern social health policy...(Historically), there are all kinds of absurd and destructive prohibitions against different psychoactive substances, and they are almost always tied to cultural clashes.

On the same topic, Professor Boyd noted that “marijuana was associated with Mexican migrants...” and that “(Cannabis was a drug) of the third world, or of developing, less powerful cultures, relative to Britain (and) North America.” Moreover, Professor MacPherson stated that, “banning cannabis had to do with racist roots, (and that) Mexican immigrants to the United States used cannabis and they threatened jobs...It was all about race.”

These comments seem to indicate that US views on cannabis may have impacted Canadian opinions about the drug, which is something that Professor Easton stated more explicitly. On that, he noted that the Canadian government, in agreeing with the rationale for US cannabis prohibition, said that “...bad people are doing this, and (so) we're going to stop it.”

The participant statements reflect the literature in that a link between racism and moral perceptions led to the criminalization of cannabis in Canada. More pointedly, the comments indicate that cannabis consumption in Canada was viewed as a depraved, foreign behaviour that was corrupting the societal values of the dominant Caucasian population.

5.2. Young People

The subject of how cannabis can potentially harm young people was prevalent in all of the interviews. When asked about health issues associated with cannabis,

Professor Boyd discussed possible negative consequences for children who are attending school while intoxicated by the drug. On that, he noted that children may not be able to function properly, and as a result, will not “...be able to get as much out of school.” This sentiment echoes the 2009 findings of the California Society of Addiction Medicine, which notes that frequent cannabis consumption by kids can have an adverse impact on academic performance, primarily because children who use the drug are more susceptible to reduced brain function and cognitive abilities.

Professor Boyd is unsure if young people who experience schizophrenia tend to self-medicate with cannabis in a destructive manner. He is also uncertain about whether cannabis consumption can trigger schizophrenia. However, he does believe that for “...young people who are experiencing (symptoms of schizophrenia)...that marijuana would definitely be a detriment.”

Some of that uncertainty is clarified by Professor Walsh, who stated:

It does seem that cannabis may provoke a psychotic episode in people who are at risk. But that is quite a small number of people...It's hard to know...why...people who are at risk of schizophrenia seem to be drawn to cannabis. There are different strains of cannabis with different relative proportions of active ingredients across the strains. The two big ones are THC and CBD (cannabidiol). CBD seems to have some effects that counter anxiety where THC appears to exacerbate them. So what we might see is that people smoke cannabis because it makes them feel better if they are struggling with psychotic disorders. But then it also might make them feel worse...But I don't think (cannabis) is a real mental health problem. I don't think the mental health of Canadians would decrease at all if cannabis were legalized tomorrow. (That) also might have to do with the fact that I don't think we'd see an increase in cannabis use...

Professor Walsh's sentiments echo the scientific literature, such as Caspi et al., 2005 and Malone et al., 2010, which found that cannabis use can accentuate symptoms of psychosis, including schizophrenia. But his remarks on how cannabis can potentially be beneficial for some people who have psychotic ailments, such as anxiety, are distinct.

This is because the literature assessed in this study focuses on the negative relationships between cannabis use and mental health, including anxiety. In addition, Professor Walsh's opinion that cannabis consumption is unlikely to rise if legalized reflects prior research, which illustrates that rates of use have changed very little in a number of jurisdictions where cannabis laws are less strict.

Professor Boyd and Professor Walsh also stated that despite increases in cannabis use, schizophrenia among the population has not risen. But the scientific research on this is inconsistent. For example, some researchers are skeptical about the recent findings of a Canadian psychiatrist, who examined a number of studies on schizophrenia, and concluded there has been a gradual increase in the national rate (Blackwell, 2013). Nonetheless, even if there has been an increase, there does not appear to be any evidence of a relationship between cannabis use and rates of schizophrenia. Instead, current research demonstrates that use of cannabis by those who are genetically predisposed to schizophrenia can result in an accelerated emergence of symptoms.

For Professor MacPherson, the most notable concerns surrounding young people and cannabis are law enforcement and stigmatization. With respect to former, he noted that:

...You have young people who are criminalized, I mean everyone is criminalized, but particularly young people that are chased around the city, harassed by police.

When asked why young people are targeted more often by police, he stated:

They don't have a place to use it because they're stigmatized. Old guys like me can sit on the back porch and puff away, if we want. Young people get stigmatized, and that's a bad thing, so they have to go out in public to smoke it, in parks or festivals, or wherever. So they're more visible...I think if a police officer comes across a young person smoking a joint it's just not good for the relationship between the two, even though it's very common for people to smoke dope, and youth aren't so discreet either.

These views are interesting in that they illustrate a possible Canadian similarity to Colorado, where young people accounted for the majority of arrests for cannabis possession when it was still illegal.

Professor MacPherson also referred to the Dutch coffee shops as a commendable model for reducing police scrutiny of young people. Regarding that, he stated that the policy was created to shield youth from drug dealers and harder drugs, and to provide them with a safe place to consume cannabis. Considering the examined literature within this study emphasizes preventing young people from using cannabis due to the elevated health risks that they are susceptible to, this is a surprising policy objective. However, Professor MacPherson's sentiment is somewhat echoed by MacCoun, 2011, which states that the Dutch model was based on the hypothesis that the gateway between cannabis and harder drugs is the result of socio-economic factors, and thus separating the market would reduce contact between cannabis users and those who consume and sell more dangerous substances. Although shielding youth is not specifically mentioned, it appears that it was considered in the policy making process as the initial legal purchasing age was 16. Nonetheless, the literature also notes that the Netherlands subsequently increased the legal age to 18, presumably to minimize the elevated risks young people are susceptible to by reducing their ability to access the drug.

Patterns of cannabis consumption by young people in Canada came up a number of times during the interviews, with the consensus being that the current usage rate is high. When asked about national decriminalization as a policy option, Officer Jones said that he does not think consumption among young people would increase "...because obviously young people can readily access it now..." Moreover, while discussing the policy option of legalization, Professor Easton said there would be a sustained demand for cannabis by young people "...because kids are (currently) smoking it in grade school, and I don't think any government would permit legal sales to minors." Professor MacPherson also mentioned a 2013 report by the United Nations Children's Fund (UNICEF), and thought that it said cannabis consumption among 15 to 20 year olds in Canada is higher than anywhere in the world.

These perceptions on cannabis accessibility and usage among young Canadians do, for the most part, reflect the literature. But there are a couple of discrepancies surrounding the details from the UNICEF report. First, while self-reported cannabis use among young Canadians is listed as the greatest at 28%, the report only evaluated 29 developed countries. Second, the young people who were surveyed were 11, 13, and 15 year olds, not 15 to 20 year olds. Nevertheless, this still illustrates that there is a high rate of cannabis use by young Canadians, especially considering that the lowest rate among the 29 nations was Norway, at approximately 5%.

The high prevalence of cannabis use by young people also helps to provide insight on whether that group is scrutinized by police more than other consumers of the drug. To that end, as the population of Canada is about 35 million (Statistics Canada, 2014), at a rate of 10%, there are roughly 3.5 million cannabis users in the nation. Moreover, there are approximately 2 million Canadians who are between the ages of 12 and 17 (Statistics Canada, 2009). Since about 28% of that age group consumes cannabis, this amounts to roughly 550,000 children, or 15% of all cannabis consumers in Canada. Meanwhile, 12 to 17 year olds account for 24% of all cannabis offences in the country (Dauvergne, 2009). Hence, it appears that Professor Macpherson's comments about young people facing elevated scrutiny are correct as the representative share of all offences for that group is considerably higher than the proportion of all consumers they account for.

Officer Jones had a distinct perspective about how cannabis cultivation, in certain circumstances, can increase the risk of harms to young people. In that regard, he stated:

I had a grow-op beside my own house, years ago, and what made me annoyed about it is not that I'm a police officer, but that I have kids, and this idiot is growing enough dope that somebody might rip him. As if I want some people coming in and doing a home invasion and firing some shots.

The above statement is a unique viewpoint that was not discussed by the other participants. However, as noted previously, Watts, et al., 2009 stated that home invasions are a risk that is associated with illicit cannabis cultivation. In addition, according to Officer Jones, such incidents are likely under-reported, to which he noted:

The dark figure of crime surrounding grow rips is unbelievable, people getting shot and nobody reports it. Very few people say 'Hey, somebody just came in and tried to steal my dope.'

Collectively, the comments of the participants demonstrate that cannabis consumption, and in some instances production, can present a number of health and safety risks to young people. While the types of hazards discussed were varied, it is evident that the interviewees recognize the importance of protecting young people from these possible dangers.

5.3. Comparisons to Alcohol and Tobacco

Comparisons to alcohol and tobacco were very common throughout the interviews. For instance, in response to being asked why recreational cannabis possession is illegal in Canada, Professor Boyd noted:

Now if we look at this problem through the lens of public health and say, 'Well, wait a minute, why is (cannabis) illegal and a drug like alcohol, or more pointedly a drug like tobacco, which takes seven years off your life if you begin to smoke with any degree of regularity, how have we made these choices?' (The) best answer is we've made these choices in some relative ignorance.

Furthermore, when asked about his views on increasing enforcement of cannabis possession laws in BC, Professor Boyd stated:

With something like cannabis, when you're using the criminal law, which is essentially a sledge hammer, to deal with something that's much less significant than the drugs people use every day in alcohol and tobacco, and caffeine, more enforcement just doesn't seem...to be an effective policy option...We should have effective enforcement around distribution of knowledge, around public health, around inappropriate forms of use, around high school kids not using, young people not using, certainly in the context of education or in the context of the developing brain.

Officer Jones also cited an example of cannabis being less dangerous than alcohol. When asked about the option of increasing enforcement against cannabis possession in BC, he stated:

There's obviously no value to it. I just don't see why you would increase enforcement...Smoking weed doesn't appear to be like alcohol, where you get stupid and violent ... (More enforcement) would (anger) the public... (and) it's a waste of...resources and time...I think the public and the government are going to have to...adapt until they think they can get it as right as they can. It's about people's freedom to do what they wish versus anything that harms the public safety aspect of it, sometimes through enforcement of the law, or not.

These assertions that cannabis is less harmful than alcohol and tobacco echo the findings from previously discussed research. For instance, Rehm et al., 2006 found that the total health costs associated with alcohol and tobacco are much more costly than for cannabis while Thomas and Davis, 2009 illustrated that the per user health costs for cannabis are also much lower. Additionally, the 2002 report by the SSCID states there is less risk of dependency with cannabis than there is with alcohol and tobacco.

With respect to Officer Jones' comment about alcohol being more likely to trigger violent actions than cannabis, it is assumed that such a view is based on his experiences as a police officer. While the selected literature for this study does not compare alcohol to cannabis in terms of whether one is more likely to cause violence than the other, none of the reviewed studies indicate that violent behaviour is a risk associated with cannabis use. Moreover, an extensive literature review on alcohol and injury by Alliston, 2012 notes that "a causal relationship has been established between alcohol and violence from both individual and population-level studies." Thus, it seems the view of Officer Jones is likely accurate.

Professor Boyd believes cannabis should be regulated in a similar manner to tobacco. More specifically, he said that the framework should be as follows:

“...more or less among consenting adults in private places (and)... in a way that promotes public health (with) regulations in place so people don't see it as acceptable.”

Similarly, Professor MacPherson argued that the present strategy in place with tobacco is better than alcohol as there is less promotion of cigarettes and because alcohol advertisements frequently target young people. Hence, he claimed:

Most people on the public health side of things think that if cannabis comes in we need to be much stricter with our regulations around promotion and packaging and take...the (attraction) away from it...

Furthermore, Professor Walsh states:

I don't think (cannabis policy) necessarily has to follow the regulations that we have on alcohol. It's much less dangerous than alcohol (and) it should be lightly regulated, (and) probably kept away from children. Aside from that, I think it should be fairly available. I'm not a fan of decriminalization...The people who produce and sell it will still be highly criminalized..., (including) people who might be of lower socio-economic status...It also deprives the public of the tax revenue. So it makes no sense. If it's okay for people to use cannabis, why would you make it illegal to produce and sell it? It's...hypocrisy.

Some of the interviewees who support cannabis legalization do not advocate using existing alcohol laws as a model for regulation. Most participants also agree that young people, particularly children, should not be permitted to access cannabis. With respect to how it should be regulated, Professor Boyd and Professor MacPherson favour a scheme that is similar to tobacco and does not allow for heavy promotion of the drug. In proposing this, they echo Sullivan, et al. 2013, which recommends that cannabis be regulated in a manner that is similar to tobacco. Their views also reflect policy in the Netherlands, where cannabis advertising by coffee shops is forbidden.

Although Professor Walsh did not specify a particular policy framework, he did state that “...safe and reliable access is the bottom line, and (this) is going to vary

according to a number of factors that are specific to different communities.” This is an interesting point, particularly because it is well illustrated by the cross-jurisdictional analysis within this paper. In addition, Professor Walsh’s comment about people of lower socio-economic status is surprising because the literature in this study does not mention that issue. Instead, it focuses on the cannabis market being dominated by organized crime. As noted previously, it was estimated that such groups control 85% of the market. Thus, it is possible that the remaining 15% could include individuals with socio-economic disadvantages.

While discussing road safety, Professor Boyd indicated that it is difficult to detect if an individual is driving while intoxicated by cannabis. To address this, he suggested allowing police officers to apply twenty-four hour licence suspensions to those who are suspected of operating a motor vehicle while under the influence of cannabis. This type of discretion is currently available to police in the context of alcohol impairment, albeit testing for that category of intoxication is more reliable.

Professor Walsh noted that cannabis impairment is not as profound as alcohol intoxication. In addition, he stated:

There is a recent (US) study that shows reduced traffic fatalities in medical cannabis states compared to non-medical cannabis states, and they associated that with a reduction in alcohol use.

Interestingly, the study he was referring to, which was conducted by Anderson and Rees, 2011, found “...strong evidence that marijuana and alcohol are substitutes.” But the authors hesitate to conclude that it is less dangerous to drive while under the influence of cannabis than while inebriated by alcohol. This is because they believe that unlike alcohol, which is frequently consumed in business establishments, cannabis is typically used at home. Thus, they state that the reduction in traffic fatalities could be the result of more people choosing to stay in and use cannabis, rather than going out to consume alcohol and then potentially driving home afterwards.

In any case, Professor Walsh does acknowledge that there are safety issues with cannabis use and driving. Like Professor Boyd, he expressed concern about the accuracy of cannabis impairment testing methods, to which he stated:

...You don't want to pull someone over and test them and say they're positive for cannabis because they smoked it a few days ago. (But unfortunately) there is nothing as precise as the blood alcohol test that we can use for cannabis.

The sentiments on cannabis impairment by Professor Boyd and Professor Walsh echo the literature, which concludes that there is a need to develop a reliable road side test. However, Professor Boyd's suggestion of allowing police officers the discretion to impose roadside suspensions is not found within the literature for this study. So perhaps that is a potential mechanism that can be provisionally implemented until a dependable screening technique is developed. For example, in the event that a driver is suspected of being intoxicated by cannabis, a police officer would have the option of suspending their licence for twenty-four hours. With respect to suspected cannabis intoxication, Officer Jones noted that "...you'll have...(a scenario) where the car is weaving around the road and (the police officer is) thinking the person might be impaired...(, and then) obviously you can smell it because it (has) such a potent (odour)."

For Professor Easton and Officer Jones, the most notable comparison drawn between alcohol and cannabis is the organized criminal activity that results from prohibition. When asked about his thoughts on provincial decriminalization as a policy option for BC, Professor Easton stated:

The problem with that is it means there is a high reward to providing the supply, and by and large the supply is by organized crime, and I actually don't like organized crime. I think they use the fruits of this stuff to fund really bad activities, where people get hurt...They make themselves wealthy. I think...this is precisely the same thing that happened with alcohol prohibition...They take that money and stick it in properties and development. It becomes a source for illegal income...I'm sympathetic to (provincial decriminalization) in the sense that it would at least make consumers not face the same penalties. But I think it's still a bad idea.

Moreover, while discussing legalization as a policy option, Professor Easton noted that “...there are bad things with smoking and there are bad things with drinking. But the balance of the alternatives is you don’t have organized crime.” Meanwhile, Officer Jones emphasized that legalization would only diminish organized criminal involvement with cannabis, rather than eradicate it. In particular, he stated:

...If you legalize (cannabis) and you end up having a government weed store, or perhaps in the liquor store they have the weed section, I’m confident that much like there is with alcohol and cigarettes, there will be a huge black market of...weed...Organized crime has made such an amount of money out of it that I can’t see them going away just because now you can buy it legally.

Professor Easton echoed this perspective by stating, “There will always be (an illegal) market, like cigarettes. About one third of all cigarettes in Canada are illegal.”

The concern about persistent organized crime despite legalization is not mentioned within the literature that is reviewed for this study. Perhaps the reason is that researchers have yet to think of any feasible policy options that will completely eliminate the organized criminal element that is associated with cannabis. If this is the case, then options that substantially reduce organized crime would be viewed as the most viable solution. In that regard, if recreational cannabis were legalized, the views of Officer Jones and Professor Easton present an important policy implication as there will likely still be a need for law enforcement against organized crime, albeit at a decreased capacity.

Professor Walsh has a slightly different view on the organized crime component. To that end, he stated:

“It’s putting money into the hands of people who are sometimes involved in crime. I don’t want to make too much of that. I think there’s too much made of that. But to some extent it’s true, that perhaps (cannabis) may be financing people who are engaged in other anti-social activities...But I certainly think the money should be going into the public coffer, at least the taxable parts of it.

There is also the money we waste enforcing (cannabis laws), which is just flushed down the toilet.”

Professor Walsh does not explicitly mention organized crime. However, his comment about cannabis being used to finance other illicit endeavours does reflect the literature that is examined in this study, which states that criminal organizations frequently engage in such activities. However, contrary to the literature, and to the perspectives of Professor Easton and Officer Jones, Professor Walsh appears to suggest that there is too much focus on organized crime. Alternatively, he may be uncertain about the extent to which it exists. Either way, it is likely that this relates to his previously noted comment regarding people who are of lower socio-economic status. In that sense, he could be indicating that there is not enough attention on problems pertaining to those who produce and sell cannabis but are not involved in organized crime.

In comparing cannabis with alcohol and tobacco, there was a general consensus among the interviewees that the status quo is not an adequate way of addressing the potential harms associated with using the drug, particularly since legal alcohol and tobacco are more harmful. Some also indicated that enforcement of current cannabis laws is an insufficient use of resources. Furthermore, certain participants agreed that prohibition enhances public safety risks, especially regarding organized crime and violent activities that can occur in association with illicit cannabis cultivation. Finally, all of the participants indicated that cannabis laws should be less stringent, which is not surprising considering the majority of BC residents share that view. In terms of how to moderate the rules, most of the interviewees suggested that cannabis should be legalized and that existing alcohol and tobacco laws can be used as models for regulating the drug.

5.4. Current Political Environment

The majority of interviewees indicated that the present political atmosphere in Canada is a significant barrier to moderating cannabis laws. For instance, when asked about provincial decriminalization in BC, Professor Boyd noted that “governments are very slow to change in this realm.” Moreover, in discussing legalization, he iterated:

We're different from the US. There they have a state by state system, although federal law still prohibits use and distribution. But Colorado and Washington have said, 'We're going to tax and regulate recreational marijuana.' That's going to be more difficult in Canada with the current government...But if Justin Trudeau becomes Prime Minister, maybe it's possible...He says he wants to do this. I think we're on the cusp of change, given what has happened in Washington and Colorado. Oregon (also recently) voted to legalize..., as did Washington D.C.

Professor MacPherson has a similar opinion about the political environment, to which he noted, "...it's a very exciting time to be involved in cannabis reform efforts, unless you're in Canada, because the federal government is dead set against it." However, like Professor Boyd, he believes that a change is imminent and thinks that recreational cannabis will be legal in Canada within five years.

Professor Easton also argued that there are political barriers to modifying cannabis laws in Canada. The reason for this is "...that people have not voted in (those) who are willing to (make a) change." In addition, he stated:

I think at the grass roots, if you talked to any politician seriously about it, they fully understand this issue, and they would certainly vote it in if they had their druthers, and I'm talking about Conservatives as well. I think there's just a universal agreement, but they're all gun shy because they're leading from behind. My own guess is it'll happen through the courts. The government will say, 'Oh, the courts have said it.' So (the courts will) have taken the heat off their stupid policy.

Although Officer Jones did not state that the current political environment is an impediment to changing the law, he did appear to signify a possible reason for why the Canadian federal government is apprehensive about altering the legal framework. In particular, he said:

I know in Washington...there are things (that) they may not have even thought about when they put the law in place, and so they continue to evolve. It'll be interesting to see where it goes here, and Canada will go through with the

exercise. I think in part, some people are surprised about what's going on in the US. But it's an evolutionary process. When you make substantive changes to law, to things that some people choose and not, there are going to be repercussions, and I don't think anybody can ever foresee them all.

This statement might be suggesting that the federal government needs to evaluate outcomes in the US before deciding whether to vary the law in Canada. If that is true, a reason could be that the Canadian government wants the capacity to anticipate as many problems as possible so that it can implement a scheme that includes sufficient safeguards to protect the public from any potential risks.

It is clear the interviewees think that the present federal government in Canada is either not interested in changing cannabis laws or is reticent about doing so, and considering recent statements made by members of the federal government, such sentiments appear to be accurate. For example, in 2013, the Canadian Association of Police Chiefs recommended allowing police officers the discretion to issue tickets for possession of small amounts, to which Prime Minister Harper said he would consider (Wingrove, 2014). However, in 2014, federal Justice Minister Peter MacKay stated that the government was still examining the options. He also said that if a change is made, the new policy would not be decriminalization or legalization and it would continue to include police discretion to use criminal offences (Wingrove, 2014).

The participants did not discuss whether the BC government would support reforming cannabis laws. But comments by current BC Premier Christy Clark demonstrate that the provincial government is avoiding the issue. Despite appearing to hint that she used cannabis in high school, Premier Clark stated that she is reluctant to answer questions on cannabis use because she wants to be a good role model for her children (The Canadian Press, 2012). More recently, she evaded questions about cannabis decriminalization by stating that "...the province needs to focus on ways to grow the economy..." (Ferrerias, 2013).

Recent changes in certain US states were commonly cited by the participants, and the majority believe that those events will influence a transformation in attitude towards cannabis within the Canadian political environment. Most also think that a

political conversion will likely result in the legalization of cannabis. Alternatively, one interviewee suggested that a change will probably derive from the Canadian court system. An issue that was not mentioned by the participants, but is prevalent in the literature, is ongoing US political pressure, which creates a barrier to repealing cannabis laws in Canada.

5.5. Quality Control

The issue of consumer health risks associated with cannabis production was raised in all but one interview. In particular, there was widespread concern about not knowing what substances and techniques are being used with respect to the cannabis growing process. For instance, Professor Boyd stated that “the trouble with prohibition is (that) you have people buying from the black market but don’t know quite what they’re buying.” He expanded on this by noting, “We don’t know the quality of it. There are a lot of mould related issues for both product and places it’s grown, like houses, and that’s not a good thing.”

Moreover, Professor MacPherson stated:

(I know people who have) had experience with smoking cannabis that is way too strong...So there is no sophistication in use..., unless you are a highly sophisticated user. But most people don’t have that knowledge. They don’t know where the (cannabis) has come from. They don’t know how strong it is, and that’s a problem... So...the regulation of the substance...is important, like it is with food...It’s a cannabis safety (issue)...You know what you’re getting when you (purchase from) a licensed retail establishment...When you’re paying...a friend of a friend on a corner, you often don’t know, again, unless you have very sophisticated networks...But (generally) there is no quality assurance, which, if you’re going to inhale a product, you would like to have that.

While providing his thoughts on decriminalization, Officer Jones also noted issues related to quality, to which he said:

... (Currently), hydroponic (cannabis) that's being grown has all kinds of pesticides and all kinds of miracle grow stuff that if anybody actually realized what they're smoking into their body, and all the chemicals on the plants, they probably wouldn't do it.

Similarly, Professor Walsh said:

...With illegal cannabis, often in terms of long term effects for people who are using frequently, it's hard to know what the impact is of contaminants, mildews, and pesticides people have been taking in (to their bodies), because there is no quality control in an illegal market ... (So) people who are using cannabis are risking their health because they're not able to ascertain the purity or cleanliness of their product.

Overall, the interviewees believe that because cannabis is illegal, there are potential health risks for consumers as most do not know how it is being cultivated or stored prior to purchasing the drug. Notable participant concerns include mould, pesticides, and potency. Surprisingly, while risks surrounding the first two issues reflect prior research, cannabis strength, which presumably relates to the THC level, is not mentioned in the literature. Nevertheless, it seems to be a reasonable concern, especially in view of a drug like alcohol, to which the content percentage is clearly listed on the label of any given beverage.

6. Policy Options

This section outlines possible policy alternatives to decrease the harms and enhance the benefits that are produced by cannabis legislation in BC.

6.1. Policy Option One: National Decriminalization

Under this policy, the Canadian federal government will amend the *CDSA* and include a provision that states there are no criminal penalties for possessing a certain

amount of cannabis (e.g. up to 30 grams). There are variations to consider with respect to this option, such as the amount that can be possessed and whether any civil penalties should be imposed as an alternative to criminal punishment. Similar to alcohol and tobacco, it may also be desirable to put restrictions around public usage. Whatever the case may be, in accordance with an initiative from Sensible BC, an organization that advocates for cannabis decriminalization in the province, the BC government should ensure that minors would only be penalized to the same extent as being caught in possession of alcohol, which is currently a fine of \$230 (BC Ministry of Justice, 2013). The full Sensible BC proposal, which is attached as Appendix B, is summarized in the next policy option.

Federal and provincial guidelines for driving under the influence of cannabis will also need to be put in place as many researchers, and most of the expert interviewees, agree that it can be dangerous to operate a motor vehicle while intoxicated by cannabis. Because the science on cannabis and how it affects driving ability is still developing, the Colorado scheme could be a potential model for BC. As noted in the cross-jurisdictional analysis, the Colorado policy has a THC limit of 5 nanograms per millilitre of blood. However, if drivers test above the legal level, they are allowed to provide court evidence that demonstrates they were not impaired. Moreover, as suggested by Professor Boyd, governments could also allow police officers to apply twenty-four hour licence suspensions to those who are suspected of operating a motor vehicle while under the influence of cannabis.

6.2. Policy Option Two: Provincial Decriminalization

Under this policy, the provincial government will amend the BC *Police Act* to include a provision that directs all police agencies operating in the province to refrain from enforcing the *CDSA* cannabis possession sections. It will also require the BC government to stipulate the amount of cannabis that a person may possess and whether any type of civil punishment might apply with respect to possession or public use.

A potential set of directives for this option has been developed by Sensible BC, an organization that recently led a petition to compel the BC government to hold a

referendum on cannabis decriminalization. The initiative did not succeed as Sensible BC was unable to obtain the minimum number of required signatures, 10% of registered voters in each district, within the 90 day period allotted to them by Elections BC (Meissner, 2013). Interestingly, Sensible BC Board Member Dana Larsen stated that “...the petition would have succeeded in Washington... (as) the sign up period is longer, fewer signatures are required, and the disclosure rules about where voters live are not as strict” (Meissner, 2013). He also stated that the organization plans to initiate a second petition prior to the 2015 federal election (Meissner, 2013). Despite the lack of success with the first petition, Sensible BC’s proposed changes to the BC *Police Act* can still be initiated by the provincial government without a referendum.

If the BC government adopts the Sensible BC framework, there are two areas that will likely need further consideration. First, the initiative does not include any new provisions for driving while under the influence of cannabis. Instead, the organization states that police can continue to handle such incidents in the same manner as they presently do (Sensible BC, Undated). However, for reasons that were discussed in the previous policy option, if the BC government chooses to decriminalize possession of small amounts, it should prescribe a legal framework for cannabis and driving, which can be modelled on Colorado’s policy and Professor Boyd’s proposal regarding licence suspensions.

The second issue that will need to be addressed is that although Sensible BC recommends decriminalizing “simple possession”, they do not define that term. Hence, the BC government will have to set out the maximum allowable quantity that individuals can possess without being subject to a criminal penalty. Moreover, they will need to decide whether the policy includes any civil penalties. In addition, as stated in the previous policy option, minors who are caught possessing cannabis will be reprimanded in the same manner as those who unlawfully possess alcohol.

6.3. Policy Option Three: Legalization

This policy will require the Canadian federal government to repeal all of the *CDSA* cannabis provisions, which will allow every province to tax and regulate the drug.

As with the other two policies, federal and provincial governments will need to create rules that address driving and cannabis intoxication. However, with this option the provinces will also have to introduce legal purchasing ages. Furthermore, minors who possess cannabis, and anyone who sells or provides it to them, will be subject to the same penalties that exist for such offences involving alcohol. For the latter, the penalty in BC is a minimum fine of \$500 (BC Government, Undated).

To ensure product safety and consumer awareness, the provincial governments will also have to introduce quality control measures for cannabis production, storage, and ingredient labelling. Provinces can use their existing alcohol and tobacco laws as models for designing such measures and to create rules that limit or restrict cannabis advertising.

7. Criteria and Measures

To reduce the harms and enhance the benefits that are produced by cannabis legislation in BC, a policy option should achieve the following three objectives: (1) decrease harms that cannabis laws impose on consumers in BC, (2) improve the capacity of the BC government to address public health and safety risks associated with cannabis, and (3) enhance economic efficiency.

Policy alternatives are compared according to four criteria: effectiveness, substance user equity, cost, and acceptability. All criteria are defined and given specific measures. Each measure is described using a benchmark that corresponds to a value (score) of low (1), moderate (2), and high (3). All criteria are weighted equally. Scores for each alternative are tallied and the policy with the highest total is considered the most preferable option. Table 4 describes the criteria and measures and illustrates the indices used for their scoring.

Table 4: Criteria and Measures

Criteria	Definition	Measure	Index
Effectiveness	The extent to which a policy will achieve each policy objective	Substantially achieves the objective	High (3)
		Somewhat achieves the objective	Moderate (2)
		Minimally achieves the objective	Low (1)
Substance User Equity	Whether the policy allows adults to access cannabis in a way that is comparable to alcohol and tobacco	Accessibility is comparable	High (3)
		Accessibility is unchanged	Moderate (2)
		Accessibility is reduced	Low (1)
Cost	The degree to which a policy minimizes enforcement expenditures	Substantially decreases expenditures	High (3)
		Reduces some expenditures	Moderate (2)
		Maintains or increases expenditures	Low (1)
Acceptability	The level of political and public support that a policy is expected to receive	Government and public are likely to approve	High (3)
		Government and public support is uncertain	Moderate (2)
		Government and public are likely to reject	Low (1)

7.1. Effectiveness

This criterion assesses the ability of a policy option to reduce the harms and enhance the benefits that are produced by cannabis legislation in BC. It measures the capacity of a given option to achieve each policy objective as follows: (1) if an objective is substantially satisfied, the policy is highly effective, (2) if an objective is somewhat met, the policy is moderately effective, and (3) if an objective is minimally fulfilled, the policy has a low level of effectiveness. For the third policy objective, enforcement costs are excluded as they will be assessed in the cost criterion.

7.2. Group Equity

This criterion, which investigates the extent of fairness that a policy option will provide for recreational cannabis consumers, is examined in two ways. For options that are solely within the policy jurisdiction of BC, equity for recreational cannabis users in the province is evaluated. With initiatives that require federal intervention, equity is analyzed for recreational cannabis consumers in Canada.

Since the literature and expert interviewees confirm that alcohol and tobacco are more dangerous than cannabis, this criterion assesses whether a policy option will treat cannabis consumers fairly compared to consumers of those drugs. The effectiveness criterion already evaluates equity issues surrounding autonomy, stigmatization, economic opportunity, and product quality. Thus, to avoid double-counting, this criterion only measures whether the policy will allow adults to access cannabis in a way that is comparable to alcohol and tobacco. If accessibility will be comparable, equity is considered high, if accessibility will be unchanged, equity is deemed moderate, and if accessibility will be reduced, equity is low.

7.3. Cost

This criterion examines the extent to which a policy minimizes expenditures on enforcement relative to the status quo. A policy that will substantially decrease costs receives a high score, a policy that will reduce some costs gets a moderate rating, and a policy that will maintain current expenditures or increase the outlay is given a low score.

7.4. Acceptability

This criterion evaluates political and public acceptability. Political acceptability refers to the willingness of the BC and federal governments to implement a given policy. Political acceptability is measured as follows: a high score is allotted if the current government is expected to approve the option, a moderate score is given if it is uncertain as to whether the present government will endorse the policy, and a low rating is applied if the existing government is expected to reject the policy.

Public acceptability refers to the anticipated level of public support for a particular policy. An assessment of recent survey results is used to measure whether support for a particular policy is low, moderate, or high.

8. Policy Analysis

This section evaluates the policy options based on the criteria and measures discussed in the previous chapter. The results of the analysis are summarized in Table 5.

8.1. Policy Option One: National Decriminalization

Effectiveness: This option will decrease the damage that cannabis laws impose on recreational consumers in Canada as possessing a small amount of the drug will not be a criminal offence. Moreover, cannabis users will no longer face the possibility of restricted mobility, diminished employability or stigmatization that can result from a

criminal conviction. If the policy includes civil penalties, such as fines, it is possible that adult cannabis users will still experience some financial hardship. Furthermore, minors caught possessing the drug may experience monetary hardship as they will be subject to a fine. Nonetheless, vulnerability to financial burdens will be lessened for all users as individual legal costs will decrease and consumer employability will be enhanced. Hence, for the first policy objective, this option receives a score of high (3 points) as it will substantially reduce the harms that cannabis laws impose on recreational consumers in Canada.

Unlike the status quo, which aims to reduce cannabis consumption by prohibiting possession, national decriminalization will allow the BC government to increase its focus on addressing risky forms of use (e.g. adolescent consumption, dependency, consumption by individuals who are susceptible to or have mental illness, and driving while intoxicated). However, there will still be considerable attention paid to the illegal production and sale of cannabis. Furthermore, those activities will continue to pose dangers to the public, such as violence and health risks associated with unsupervised growing and storage. Thus, for the second policy objective, this criterion is given a score of moderate (2 points) as the capacity of the BC government to address health and safety risks associated with cannabis consumption and production will only be somewhat improved.

As noted above, the risk of diminished employability of cannabis consumers in BC will be reduced. But the province will continue to relinquish potential tax revenue and legitimate employment opportunities because the cultivation and distribution of cannabis will remain in the underground market. Consequently, this criterion gets a score of low (1 point) with respect to the third policy objective as economic efficiency will only be minimally enhanced.

Substance User Equity: Because production and sales of cannabis will continue to be unlawful under this policy, adult access to the drug will be the same as the status quo. Consequently, this criterion receives a score of moderate (2 points).

Cost: This option will significantly reduce criminal justice system costs related to cannabis possession. In particular, it will lessen expenditures on policing, court, and correctional services. However, a portion of those savings will need to be allocated towards enforcement measures that help to minimize traffic accident risk. In addition, because production and distribution of cannabis will continue to be illegal, law enforcement costs associated with those activities will still be considerable. Hence, this policy receives a moderate (2 points) score as it will lower some costs relative to the status quo.

Acceptability: Most of the interviewees believe that the current federal government is not willing to repeal existing cannabis possession laws. However this may not be entirely accurate as recent statements by the Prime Minister and federal Justice Minister have indicated that they are considering options to moderate the penalties. Nonetheless, they also made it clear that decriminalization is not an alternative that is being considered. As the literature notes, one likely reason for this is US political pressure to maintain the status quo. Consequently, national decriminalization receives a low (1 point) score for political acceptability.

Recent surveys demonstrate that the majority of Canadians are in favour of making cannabis possession laws less strict. Thus, this aspect of the criterion gets a high (3 points) score as the public is likely to accept national decriminalization.

8.2. Policy Option Two: Provincial Decriminalization

Effectiveness: It is possible that this policy will not reduce the harms that cannabis laws impose on recreational cannabis users in BC to the same extent as national decriminalization. This is because the RCMP, which is a federal police agency, provides a significant amount of provincial and municipal policing services in the province. Hence, there is a chance that the RCMP would challenge the policy and continue to enforce current cannabis possession laws in the BC jurisdictions that they oversee. However, for the purpose of this assessment, unless the RCMP explicitly states an intention to disregard the policy, it is assumed that they will comply with the provincial

directive, which will have the same impact as national decriminalization. Therefore, this aspect of the criterion receives a high (3 points) ranking.

The caveat regarding the RCMP is also a potential setback with respect to the second policy objective. Otherwise, provincial decriminalization will improve the capacity of the BC government to address public health and safety risks to the same extent as national decriminalization. Thus, this portion of the criterion receives a score of moderate (2 points).

The RCMP caution aside, provincial decriminalization will enhance economic efficiency to the same level as national decriminalization. As such, a score of low (1 point) is allotted to this part of the criterion.

Substance User Equity: This policy will have the same effect on cannabis accessibility in BC as national decriminalization. Thus, this criterion gets a moderate (2 points) rating.

Cost: Assuming provincial decriminalization is not challenged by the RCMP, the policy will reduce costs to the same extent as national decriminalization. Consequently, this criterion receives a moderate (2 points) score.

Acceptability: BC Premier Christy Clark has avoided discussing the government's position on cannabis decriminalization, stating that she wants to be a good role model for her children and prefers to focus on the economy. Another reason for evading the subject might be due to political pressure from the US as the majority of cannabis grown in BC is exported to that country. However, if a second Sensible BC petition gathers enough signatures for a referendum, it is possible that a majority of voters could endorse provincial decriminalization, which would obligate the BC government to adopt the policy. Thus, despite a lack of approval, a score of moderate (2 points) is given as the possibility of a referendum creates uncertainty as to whether the policy will be accepted by the BC government.

Recent survey results illustrate that the majority of people in BC want cannabis laws to be less strict. Therefore, public acceptability for provincial decriminalization receives a high (3 points) ranking.

8.3. Policy Option Three: Legalization

Effectiveness: By making possession legal, this policy will eliminate the majority of harms that cannabis laws impose on consumers in Canada. The policy will include fining minors who are caught possessing cannabis. However, compared to the status quo, for which 12 to 17 year olds account for 24% of all cannabis offences, there will be a significant reduction in potential criminal justice system harms to underage consumers. Thus, this aspect of the criterion is given a score of high (3 points) as harms to all users will be significantly reduced.

With legalization, there will be much less concentration on possession as well as illicit production and distribution because all of those activities will be legal. Therefore, compared to both decriminalization policies, the BC government will have a greater capacity to focus on addressing risky forms of cannabis use. Furthermore, legalizing the production and sale of cannabis will drastically reduce dangers to the public such as violence and health risks associated with improper growing and storage. Consequently, this portion of the criterion is given a score of high (3 points).

Like decriminalization, legalization will help to improve the employability of cannabis consumers as there will no longer be criminal convictions for possession. Moreover, it will create legitimate employment opportunities related to cannabis cultivation and distribution, for which the BC government can collect tax revenue. Therefore, this part of the criterion gets a score of high (3 points) as economic efficiency will be substantially enhanced.

Substance User Equity: Legalization will improve cannabis accessibility for adults to an extent that is similar to alcohol and tobacco. Therefore, this criterion is given a score of high (3 points).

Cost: Like the decriminalization options, costs associated with enforcing cannabis possession laws will be significantly reduced. Moreover, spending on enforcement against production and distribution of cannabis will also be substantially decreased as those activities will be legal under this policy. Some of those savings will be offset by increased road safety, business, and quality assurance monitoring. But expenditures for those areas can also be funded with the expected increase in government tax revenue. Thus, this criterion gets a high (3 points) rating as overall enforcement costs will be substantially reduced.

Acceptability: The current federal government has stated that legalization is not an option that they are presently considering. As with national decriminalization, a likely reason for this is US political pressure to maintain the status quo. Consequently, the criterion receives a low (1 point) rating with respect to political acceptance.

Recent survey data illustrates that 70% of Canadians support having less strict cannabis laws. However, only 36% favour legalization. As such, this criterion gets a score of low (1 point) for public acceptance.

Table 5: Policy Analysis Summary

Criterion	National Decriminalization	Provincial Decriminalization	Legalization
Effectiveness	6	6	9
Harms to recreational consumers	3	3	3
Public Health and Safety Risks	2	2	3
Economic Efficiency	1	1	3
Substance User Equity	2	2	3
Adult Cannabis Accessibility	2	2	3
Low Cost	2	2	3
Enforcement Expenditures	2	2	3
Acceptability	4	5	2
Political	1	2	1
Public	3	3	1
Total	14	15	17

9. Recommendations

The evaluation of the policy options reveals that none are dominant. The most notable trade-offs between the decriminalization options and legalization are effectiveness and acceptability. Legalization is more effective at achieving the policy objectives. However, compared to the decriminalization policies, public support for legalization is low and government acceptance is unlikely.

For substance user equity, legalization is better than the decriminalization options because adult access to cannabis will be comparable to alcohol and tobacco. Furthermore, legalization will reduce more enforcement costs than the other policies and

will increase the capacity of the provincial government to address risky form of cannabis use.

With these trade-offs in mind, legalization is recommended as the most preferable option for reducing the harms and enhancing the benefits that are produced by cannabis legislation in BC. The primary rationale is that the analysis illustrates that legalization will be the most effective at achieving the policy objectives. It is also noteworthy that legalization ranked highest for three out of the five criteria that were examined.

Despite being more effective, the assessment demonstrates that for legalization to be implemented, a change in political and public disposition is necessary. It is possible that national support for legalization is low because of longstanding cultural opposition to the drug, and while attitudes towards consumption are moderating, most Canadians do not endorse a legitimate cannabis market. Furthermore, although some US states have recently legalized cannabis, there continues to be political pressure from that country to keep cannabis illegal in Canada. Thus, in the interim, provincial decriminalization is recommended as it has the greatest likelihood of being accepted and it will still achieve the policy objectives more than the status quo.

10. Future Considerations

Future investigation surrounding cannabis in BC should focus on some of the research gaps that are discussed in this study. These include the inconsistent findings regarding some of the potential health impacts of cannabis use and the inconclusive results with respect to cannabis impairment and driving. Since cannabis legalization in Washington and Colorado are recent phenomena, a future evaluation of the policy outcomes in those jurisdictions is also advisable as it could provide further insight on how to achieve the policy objectives that are outlined in this paper. An investigation of additional jurisdictions that have more moderate cannabis laws could also help to identify further alternatives for BC.

11. Conclusion

Each year, approximately 585,000 people use cannabis in BC, which is a sizeable contingent given the total population of the province is roughly 4.5 million. But while the policy objective of cannabis prohibition is to decrease demand, the literature examined in this study demonstrates that enforcing cannabis laws is costly and has little effect on consumption patterns.

There are potential hazards associated with cannabis use, particularly with respect to young people, respiratory functioning, mental health, and driving. However, prior research indicates that it is more dangerous to consume alcohol and tobacco, both of which are legal. Meanwhile, cannabis consumers are at risk of being criminalized, which can result in loss of liberty, diminished employability, financial hardship, community alienation, and travel restrictions. In addition, the status quo allows criminal organizations to control the cannabis market and capture lucrative tax-free profits, which are frequently used to fund other illicit activities. The current approach also increases violence and elevates risks associated with unsafe cultivation and storage.

An analysis of foreign jurisdictions suggests that usage rates change very little when cannabis laws are moderated. In addition, the assessment provides evidence that more lenient rules reduce enforcement costs and, depending on the policy, can enhance government revenue and legitimate employment opportunities.

In providing valuable insight on the policy trade-offs, the expert interviewees echoed most of the findings from the literature that is reviewed in this paper. Overall, they agreed that prohibition is an inapt policy and that the laws should be moderated.

The results of this study indicate that cannabis legalization is the most preferable option. However, in the short-term, provincial decriminalization is recommended as it has a greater likelihood of being accepted by government and the public. Although it ranks as less effective than legalization, provincial decriminalization will still be a positive shift as it will reduce some of the harms and enhance some of the benefits that are produced by cannabis legislation in BC.

References

- Agrawal, A., et al. (2007), Contrasting models of genetic co-morbidity for cannabis and other illicit drugs in adult Australian Twins, *Psychological Medicine*, 37(1), pp.49-60, DOI:10.1017/S0033291706009287
- Alliston, L. (2012), Alcohol-Related Injury: An Evidence-Based Literature Review, Research New Zealand, Retrieved from http://www.acc.co.nz/PRD_EXT_CSMP/groups/external_providers/documents/reports_results/wpc112196.pdf
- Anderson, D. and Rees, D. (2011), Medical Marijuana, Traffic Fatalities, and Alcohol Consumption, Institute for the Study of Labor, 6112, Retrieved from <http://ftp.iza.org/dp6112.pdf>
- Armentano, P. (2013), Should Per Se Limits Be Imposed For Cannabis? Equating Cannabinoid Blood Concentrations with Actual Driver Impairment: Practical Limitations and Concerns, *Humboldt Journal of Social Relations*, Issue 35, Retrieved from <http://www.mpp.org/assets/pdfs/library/Armentano.pdf>
- Australian Bureau of Statistics (2014), June Key Figures, Australian Demographic Statistics, Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/3101.0>
- Australian Crime Commission (2014), 2012-2013 Illicit Drug Data Report, Retrieved from <https://www.crimecommission.gov.au/sites/default/files/290414-IDDR-2012-13.pdf>
- Australian Institute of Health and Welfare (2011), *Drugs in Australia 2010: Tobacco, Alcohol and Other Drugs*, Retrieved from <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737420455>
- Bahdi, R., et al. (2010) Racial Profiling, British Columbia Civil Liberties Association, Retrieved from <https://bccla.org/wp-content/uploads/2012/03/2007-BCCLA-Report-Racial-Profiling.pdf>
- Balko, R. (2014), Since Marijuana Legalization Highway Fatalities in Colorado are at Near Historic Lows, *The Washington Post*, Retrieved from <http://www.washingtonpost.com/news/the-watch/wp/2014/08/05/since-marijuana-legalization-highway-fatalities-in-colorado-are-at-near-historic-lows/>
- Beasley E. and Beirness, D. (2012), Alcohol and Drug Use Among Drivers Following the Introduction of Immediate Roadside Prohibitions in British Columbia: Findings from the 2012 Roadside Survey, Beirness & Associates, Retrieved from <http://www.pssg.gov.bc.ca/osmv/shareddocs/bc-roadside-report2012.pdf>

- Bedard, M., et al. (2007), The Impact of Cannabis on Driving, Canadian Journal of Public Health, 98(1), pp.6-11, <http://www.jstor.org.proxy.lib.sfu.ca/stable/pdfplus/41994863.pdf?acceptTC=true>
- Blackwell, T. (2013), Immigration, Lack of Sunshine Cited as Possible Culprits Behind Eyebrow-Raising Spike in Canadian Schizophrenia Cases, National Post, Retrieved from <http://news.nationalpost.com/2013/03/05/immigration-lack-of-sunshine-cited-as-possible-culprits-behind-spike-in-canadian-schizophrenia-cases/>
- Bonn-Miller, M. (2005), Marijuana Use Among Tobacco Smokers: Relationship to Anxiety-Related Factors, Journal of Psychopathology and Behavioural Assessment, 27(4), pp.279-289, DOI: 10.1007/s10862-005-2408-6
- Boyce, J., et al. (2014), Police-Reported Crime Statistics in Canada, 2013, Statistics Canada, Retrieved from <http://www.statcan.gc.ca/pub/85-002-x/2014001/article/14040-eng.htm?fpv=2693>
- Boyd, N. (2013), The Enforcement of Marijuana Possession Offences in British Columbia: A Blueprint for Change, (n.p.), Retrieved from <http://sensiblebc.ca/wp-content/uploads/2013/02/Blueprint-for-Change.pdf>
- Braun, V. and Clarke, V. (2006), Using thematic analysis in psychology, Qualitative Research in Psychology, 3(2) pp.77-101, DOI 10.1191/1478088706qp063oa
- British Columbia Ministry of Justice (2014), British Columbia Crime Trends, 2004 – 2013, Police Services Division, Retrieved from <http://www.pssg.gov.bc.ca/policeservices/shareddocs/crime-trends.pdf>
- British Columbia Ministry of Justice (2013), BC Liquor Policy Review: Final Report, Retrieved from http://www2.gov.bc.ca/local/haveyoursay/Docs/liquor_policy_review_report.pdf
- British Columbia Ministry of Justice (2014), British Columbia Policing Jurisdiction Crime Trends, 2004 – 2013, Police Services Division, Retrieved from <http://www.pssg.gov.bc.ca/policeservices/shareddocs/crime-trends-police-jurisdiction.pdf>
- British Columbia Ministry of Justice (2013), Who Can Drink?, BC Liquor Policy Review, Retrieved from <http://engage.gov.bc.ca/liquorpolicyreview/who-can-drink/>
- British Columbia Stats (2014), Quarterly Population Highlights, Retrieved from <http://www.bcstats.gov.bc.ca/Home.aspx>

- British Columbia Stats (2015), 2014 Sub-Provincial Population Estimates, Retrieved from <http://www.bcstats.gov.bc.ca/StatisticsBySubject/Demography/PopulationEstimates.aspx>
- Brooks, A., et al. (1999), Costs Associated with the Operation of the Cannabis Expiation Notice Scheme in South Australia, Drug and Alcohol Services Council, Retrieved from <http://www.sahealth.sa.gov.au/wps/wcm/connect/47a974804f7bae9f82b4dbc4163822ed/Monograph+5-DASSA-Feb2013.pdf?MOD=AJPERES&CACHEID=47a974804f7bae9f82b4dbc4163822ed>
- California Society of Addiction Medicine (2009), Impact of Marijuana on Children and Adolescents, http://www.csam-asam.org/sites/default/files/impact_of_marijuana_on_children_and_adolescents.pdf
- Carstairs, C. (2000), 'Hop Heads' and 'Hypes': Drug Use, Regulation, and Resistance in Canada, 1920-1961, National Library of Canada, Retrieved from <https://tspace.library.utoronto.ca/handle/1807/14452>
- Carstairs, C. (2006), Jailed for Possession: Illegal Drug Use, Regulation, and Power in Canada, 1920-1961, Toronto: University of Toronto Press, p. 31, Retrieved from http://books.google.ca/books?hl=en&lr=&id=_gTjug3X1EgC&oi=fnd&pg=PP1&dq=carstairs+jailed+for+possession+&ots=feN-n1ogVv&sig=_YczdvTi6xfTnvsI8WLB99bamco#v=onepage&q=1937&f=false
- Carter, I., and MacPherson, D. (2013), Getting to Tomorrow: A Report on Canadian Drug Policy, Canadian Drug Policy Coalition, Retrieved from http://drugpolicy.ca/report/CDPC2013_en.pdf
- Caspi, et al. (2005), Moderation of the Effect of Adolescent-Onset Cannabis Use on Adult Psychosis by a Functional Polymorphism in the Catechol-O-Methyltransferase Gene: Longitudinal Evidence of a Gene X Environment Interaction, *Biological Psychiatry*, 57(10), pp.1117-1127, DOI: 10.1016/j.biopsych.2005.01.026
- Centre for Addictions Research of BC (2013), Prevalence of Cannabis Use in British Columbia, University of Victoria, Retrieved from <http://www.carbc.ca/Portals/0/propertyagent/558/files/368/cannabisusedatanote.pdf>
- Cole, J. (2013), Memorandum For All United States Attorneys, U.S. Department of Justice, Office of the Deputy General, Retrieved from <http://www.justice.gov/iso/opa/resources/3052013829132756857467.pdf>

- Colorado Department of Public Health and Environment (2013), Medical Marijuana Statistics, Retrieved from <https://www.colorado.gov/pacific/cdphe/medical-marijuana-statistics>
- Colorado Department of Transportation (2013), Drugged Drivers Involved in Fatal Crashes, Retrieved from <http://www.coloradodot.info/programs/alcohol-and-impaired-driving/druggeddriving/assets/fatal-data-drug.pdf>
- Common Sense for Drug Policy (1998), Fact Sheet: Drug Use in the United States and the Netherlands, Drug Policy Information Sheet, Retrieved from <http://www.csdp.org/research/dutch.pdf>
- Connelly, J. (2011), Marijuana Initiative – up, up and away, Seattle Post-Intelligencer, Retrieved from <http://blog.seattlepi.com/seattlepolitics/2011/12/28/marijuana-initiative-up-up-and-away/?plckOnPage=2&plckItemsPerPage=10&plckSort=TimeStampDescending>
- Costa, N., et al. (2012), Prevalence of Ethanol and Illicit Drugs in Road Traffic Accidents in the Centre of Portugal: An Eighteen Year Update, Forensic Science International, 216(1-3), pp.37-43, DOI:10.1016/j.forsciint.2011.08.013
- Couper, F. and Peterson, B. (2014), The Prevalence of Marijuana in Suspected Impaired Driving Cases in Washington State, Journal of Analytical Toxicology, 38(8), pp.569-574, DOI:10.1093/jat/bku090
- Dauvergne, M. (2009), Trends in Police Reported Drug Offences in Canada, Statistics Canada, Retrieved from <http://www.statcan.gc.ca/pub/85-002-x/2009002/article/10847-eng.htm#a4>
- Diplock, J., et al. (2012), An Updated Review of the Research on Risks and Harms Associated to the Use of Marijuana, Journal of Global Drug Policy and Practice, 6 (3), Retrieved from <http://www.globaldrugpolicy.org/Issues/Vol%206%20Issue%203/An%20Updated%20Review%20Marijuana%20journal%20final.pdf>
- Diplock, J. and Plecas, D. (2011), The Increasing Problem of Electrical Consumption in Indoor Marijuana Grow Operations in British Columbia, University of the Fraser Valley, Centre for Public Safety and Criminal Justice Research, Retrieved from http://www.vancouversun.com/pdf/ElectricalReport_FINALCOPY_WebVersion.pdf
- Dolin, B. (2001), National Drug Policy: The Netherlands, Library of Parliament, Retrieved from <http://www.parl.gc.ca/content/sen/committee/371/ille/library/dolin1-e.htm#C.%20%20E2%80%9CContinuity%20and%20Change%20%9D%20Report%20%20E2%80%93%201995>

- Easton, S. (2004), Marijuana Growth in British Columbia, The Fraser Institute, Public Policy Sources, 74, Retrieved from <http://www.fraserinstitute.org/publicationdisplay.aspx?id=13187&terms=marijuana+growth+in>
- European Monitoring Centre for Drugs and Drug Addiction (2014), Cannabis: last year prevalence among all adults (15-64 years old), Prevalence Maps – Prevalence of Drug Use in Europe, Retrieved from <http://www.emcdda.europa.eu/countries/prevalence-maps>
- European Monitoring Centre for Drugs and Drug Addiction (2014), Country Overview: Portugal, Retrieved from <http://www.emcdda.europa.eu/publications/country-overviews/pt#pexp>
- European Monitoring Centre for Drugs and Drug Addiction (2014), National Drug-Related Public Expenditure: Netherlands, Countries: National Drug-Related Information and Data, Retrieved from <http://www.emcdda.europa.eu/countries/public-expenditure/netherlands>
- European Monitoring Centre for Drugs and Drug Addiction (2007), Selected Issues 2007: Drugs and Driving, Retrieved from http://www.drugs.ie/resourcesfiles/ResearchDocs/Europe/Research/2007/TDSI07003ENC_WEB.pdf
- Fergusson, D., et al. (2006), Cannabis use and other illicit drug use: testing the cannabis gateway hypothesis, *Addiction*, 101(4), pp.556-569, DOI:10.1111/j.1360-0443.2005.01322.x
- Fergusson, D. and Bowden, J. (2008), Cannabis use and later life outcomes, *Addiction*, 103(6), 969-976, DOI: 10.1111/j.1360-0443.2008.02221.x
- Ferreras, J. (2013), Marijuana Legalization in BC May Be Closer Than We Think, *Huffington Post*, Retrieved from http://www.huffingtonpost.ca/2013/05/10/marijuana-legalization-bc_n_3205944.html
- Forum Research Inc. (2013), More than two thirds support decriminalization/legalization of marijuana, News Release, Retrieved from [http://www.forumresearch.com/forms/News%20Archives/News%20Releases/50140_Federal_Trudeau_-_Marijuana_\(24082013\)_Forum_Research.pdf](http://www.forumresearch.com/forms/News%20Archives/News%20Releases/50140_Federal_Trudeau_-_Marijuana_(24082013)_Forum_Research.pdf)
- Fuchs, E. (2013), Why It's Crazy to Try to Set DUI Limits for Marijuana, *Business Insider*, Retrieved from <http://www.businessinsider.com/why-dui-limits-for-pot-are-bad-2013-12>

- Gargani, Y., et al. (2011), Too Many Mouldy Joints – Marijuana and Chronic Pulmonary Aspergillosis, *Mediterranean Journal of Hematology and Infectious Diseases*, 3(1), DOI:10.4084/MJHID.2011.005
- Garvey, T., and Yeh, B. (2014), State Legalization of Recreational Marijuana: Selected Legal Issues, Congressional Research Service, Retrieved from <http://www.fas.org/sgp/crs/misc/R43034.pdf>
- Gecelovsky, P. (2008), Canadian Cannabis: Marijuana as an Irritant/Problem in Canada US Relations, *The American Review of Canadian Studies*, 38(2), pp.207-212, DOI: 10:1080/02722010809481709
- Gettman, J. (2009), Marijuana in Colorado: Arrests, Usage, and Related Data, *The Bulletin of Cannabis Reform*, Retrieved from <http://www.drugscience.org/States/CO/CO.pdf>
- Government of Canada (2015), National Anti-Drug Strategy Evaluation, Department of Justice, Retrieved from <http://www.justice.gc.ca/eng/rp-pr/cp-pm/eval/rep-rap/12/nas-sna/p1.html>
- Government of the Netherlands (Undated), Alcohol, drugs and driving, Mobility, public transport and road safety, Retrieved from <http://www.government.nl/issues/mobility-public-transport-and-road-safety/road-safety/alcohol-drugs-and-driving>
- Government of the Netherlands (2014), Zero tolerance for dangerous drug users in traffic, News, Retrieved from <http://www.government.nl/news/2014/02/04/zero-tolerance-for-dangerous-drug-users-in-traffic.html>
- Government of South Australia (2012), Illicit Drug Laws, South Australia Health, Retrieved from <http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/health+topics/legal+matters/illicit+drug+laws>
- Government of South Australia (Undated), Drug Driving FAQs, Department of Planning, Transport and Infrastructure, Retrieved from http://www.dpti.sa.gov.au/towardszerotogether/Safer_behaviours/Drug_driving2/drug_driving_faqs
- Greenwald, G. (2009), Drug Decriminalization in Portugal: Lessons for Creating Fair and Successful Drug Policies, Cato Institute, Retrieved from http://www.cato.org/sites/cato.org/files/pubs/pdf/greenwald_whitepaper.pdf
- Hall, W. and Lynskey, M. (2005), Is cannabis a gateway drug? Testing the hypotheses about the relationship between cannabis use and the use of other illicit drugs, *Drug and Alcohol Review*, 24(1), pp.39-48, DOI: 10.1080/09595230500126698

- Harrison, L. (1997), The Validity of Self-Reported Drug Use in Survey Research: An Overview and Critique of Research Methods. In *The Validity of Self-Reported Drug Use: Improving Accuracy Survey Estimates* (pp.17-36), Nida Research Monograph 167, U.S. Department of Health and Human Services National Institutes of Health, National Institute on Drug Abuse, Retrieved from <http://archives.drugabuse.gov/pdf/monographs/monograph167/monograph167.pdf>
- Henchman, J. (2014), Taxing Marijuana: The Washington and Colorado Experience, The Tax Foundation, Retrieved from <http://taxfoundation.org/article/taxing-marijuana-washington-and-colorado-experience>
- Hughes, B. (2007), A Comparison of Drugged-Driving Laws and their Roadside Enforcement Procedures Across the EU and Norway, International Council on Alcohol, Drugs, and Traffic Safety, Retrieved from <http://www.icadts2007.org/print/69drugdrivinglaws.pdf>
- Hughes, C. and Stevens, A. (2010), What Can we Learn from the Portuguese Decriminalization of Illicit Drugs?, *British Journal of Criminology*, 50(6), pp. 999-1022, DOI:10.1093/bjc/azq038
- Hughes, T. (2014), Marijuana legal but often scarce in Washington state, USA Today, Retrieved from <http://www.usatoday.com/story/news/nation/2014/09/26/washington-marijuana-legal-scarce/16266573/>
- Institute for Road Safety Research (2011), SWOV Fact Sheet: Driving under the influence of drugs and medicines, Retrieved from http://www.swov.nl/rapport/Factsheets/UK/FS_Drugs_and_medicines.pdf
- Johnson, G. (2013), More Washington State Drivers Testing Positive for Marijuana, Huffington Post, Retrieved from http://www.huffingtonpost.com/2013/11/21/washington-state-marijuana_n_4318516.html
- Kilmer, B., et al. (2013), Before the Grand Opening: Measuring Washington State's Marijuana Market in the Last Year Before Legalized Commercial Sales, RAND Drug Policy Research Centre, Retrieved from http://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR466/RAND_RR466.pdf
- Kline, J. (2012), Capturing the Dutch Marijuana Market, Full Comment, National Post, Retrieved from <http://fullcomment.nationalpost.com/2012/05/01/jesse-kline-capturing-the-dutch-marijuana-market/>

- Levine, H., et al. (2012), 240,000 Marijuana Arrests: Costs, Consequences, and Racial Disparities of Possession Arrests in Washington, 1986-2010, Marijuana Arrest Research Project, Retrieved from <http://marijuana-arrests.com/docs/240,000-Marijuana-Arrests-In-Washington.pdf>
- Levine, H., et al. (2012), 210,000 Marijuana Possession Arrests in Colorado: 1986-2010, Marijuana Arrest Research Project, Retrieved from <http://marijuana-arrests.com/docs/210,000-Marijuana-Arrests-In-Colorado.pdf>
- Light, M., et al. (2014), Market Size and Demand For Marijuana in Colorado: Prepared for the Colorado Department of Revenue, The Marijuana Policy Group, Retrieved from <http://www.colorado.gov/cs/Satellite?blobcol=urldata&blobheadname1=Content-Disposition&blobheadname2=Content-Type&blobheadvalue1=inline;+filename=%22Market+Size+and+Demand+Study,+July+9,+2014.pdf%22&blobheadvalue2=application/pdf&blobkey=id&blobtable=MungoBlobs&blobwhere=1252008574534&ssbinary=true>
- Littlely, B. (2012), One in 16 Test Positive as Police Record a Surge in Drug-Driver Rates, The Advertiser, Retrieved from <http://www.adelaidenow.com.au/news/south-australia/one-in-16-test-positive-as-police-record-a-surge-in-drug-driver-rates/story-e6frea83-1226455295918>
- Lowenstein, S. and Koziol-McLain, J. (2001), Drug and Traffic Crash Responsibility: A Study of Injured Motorists in Colorado, The Journal of Trauma, Injury, Infection and Critical Care, 50(2), pp.313-320, Retrieved from <http://archives.hempembassy.net/hempe/resources/Drugs%20and%20traffic%20crash%20responsibility-%20a%20study%20of%20injured%20motorists%20in%20Colorado.pdf>
- Lus, S. (2014), Legal Pot: Canadians Warned of Border Troubles, CBC News, Retrieved from <http://www.cbc.ca/news/canada/british-columbia/legal-pot-canadians-warned-of-border-troubles-1.2700236>
- Marijuana Policy Project (undated), Colorado and Washington: Life After Legalization, Retrieved from <http://www.mpp.org/assets/pdfs/library/CO-WA.pdf>
- Malone, D., et al. (2010), Adolescent cannabis use and psychosis: epidemiology and neurodevelopment models, British Journal of Pharmacology, 160 (3), pp.511-522, DOI: 10.1111/j.1476-5381.2010.00721.x
- MacCoun, R. (2011), What we can learn from the Dutch cannabis coffeeshop system?, Society for the Study of Addiction, 106(11), pp.1899-1910, DOI:10.1111/j.1360-0443.2011.03572.x

- Mallick, J., et al. (2007), *Drugs and Driving in Australia: A Survey of Community Attitudes, Experience and Understanding*, Australian Drug Foundation, Retrieved from http://www.druginfo.adf.org.au/attachments/400_Drugs_and_Driving_in_Australia_fullreport.pdf
- Masters, N. (2011), *Aspergillus, The Evidence Log*, International Association for Property and Evidence, Inc., 3, Retrieved from http://iape.org/evidencelog/EvidenceLogArchive/2011_Evidence_Log/Evidence_Log_2011_3.pdf
- McKight, Z. (2012), *Busted: Search our Database to Discover How Many Pot Busts Occurred in Your City Last Year*, Vancouver Sun, Retrieved from <http://www.vancouversun.com/news/illegal+possess+small+amounts+marijuana/7521210/story.html>
- Meissner, D. (2013), *Sensible BC Petition to Decriminalize Marijuana Comes Up Short*, The Canadian Press (in the Huffington Post), Retrieved from http://www.huffingtonpost.ca/2013/12/09/sensible-bc-petition-comes-up-short_n_4412958.html
- Miron, J. and Waldock, K. (2010), *The Budgetary Impact of Ending Drug Prohibition*, Cato Institute, Retrieved from <http://www.cato.org/sites/cato.org/files/pubs/pdf/DrugProhibitionWP.pdf>
- Moore, T., et al. (2007), *Cannabis use and risk of psychotic or affective mental health outcomes: a systematic review*, *The Lancet*, 370(9854), pp.319-328
- National Cannabis Prevention and Information Centre (2013), *Factsheet 2: Cannabis and the Law*, Retrieved from <http://ncpic.org.au/media/1511/cannabis-and-the-law.pdf>
- National Organization for the Reform of Marijuana Laws (undated), *Colorado Drugged Driving*, Retrieved from <http://norml.org/legal/item/colorado-drugged-driving>
- Organized Crime Agency of British Columbia (2001), *Annual Report*, Retrieved from http://www.ocabc.org/publications/OCA_Annual_Report_2001.pdf
- Owusu-Bempah, A. and Wortley, S. (2013), *Race, Ethnicity, Crime, and Criminal Justice in Canada*. In Bucerius, S., and Tonry, M. (2013), *Oxford Handbook of Ethnicity, Crime, and Immigration*, The Oxford University Press, Retrieved from <http://www.myilibrary.com?ID=550701>

- Plecas, D., et al. (2011) Revisiting the Issues Around Commercially Viable Indoor Marihuana Growing Operations in British Columbia, University of the Fraser Valley, Centre for Public Safety and Criminal Justice Research, Retrieved from <http://www.surrey.ca/files/RevisitingtheIssuesAroundCommerciallyViableIndoorMarihuanaGrowingOperationsinBritishColumbia.pdf>
- Pletcher, M. et al. (2012), Association Between Marijuana Exposure and Pulmonary Function Over 20 Years, American Medical Association, 307(2), Retrieved from <http://www.delta9.ca/resources/Lung%20Function/Association%20Between%20Marijuana%20Exposure%20and%20Pulmonary%20Function%20Over%2020%20Years.pdf>
- Rahn, B. (2012), US: Washington State Cannabis Legalization: A Questionable Model, Hawaii Daily News, Cannabis Campaigners' Guide Information and News Pages, Retrieved from <http://www.ccguide.org/news/shownewsarticle.php?articleid=17271>
- Rehm, J., et al. (2006), The Costs of Substance Abuse in Canada 2002, Retrieved from http://koalicija.org/serveris/Method_liter/Cost%20of%20substance%20abuse%20in%20Canada,%202002.pdf
- Reinarman, C., et al. (2004), The Limited Relevance of Drug Policy: Cannabis in Amsterdam and San Francisco, American Journal of Public Health, 94(5), Retrieved from https://laulima.hawaii.edu/access/content/user/hallston/website/reinarman_sf.pdf
- Revised Code of Washington (2012), Retrieved from <http://apps.leg.wa.gov/rcw/>
- Rigter, H. (2006), What Drug Policies Cost: Drug Policy Spending in the Netherlands in 2003, Addiction, 101(3), pp.323-329, DOI: 10.1111/j.1360-0443.2006.01337.x
- Rocky Mountain High Intensity Drug Trafficking Area (2014), The Legalization of Marijuana in Colorado: The Impact, vol. 2, Retrieved from <http://www.rmhidta.org/html/August%202014%20Legalization%20of%20MJ%20in%20Colorado%20the%20Impact.pdf>
- Rolles, S. (2014), Cannabis Policy in the Netherlands: Moving Forwards Not Backwards, Transform Getting Drugs Under Control, Retrieved from <http://www.unodc.org/documents/ungass2016//Contributions/Civil/Transform-Drug-Policy-Foundation/Cannabis-policy-in-the-Netherlands.pdf>
- Russoniello, K. (2012), The Devil (and Drugs) in the Details: Portugal's Focus on Public Health as a Model for Decriminalization of Drugs in Mexico, Yale Journal of Health Policy, Law, and Ethics, 12(2), Article 14, Retrieved from <http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=1200&context=yjhp>

- Safarian, T., et al. (2005), Gene expression changes in human small airway epithelial cells exposed to Δ^9 tetrahydrocannabinol, *Toxicology Letters*, 158(2), pp.95-107, DOI:10.1016/j.toxlet.2005.03.008
- Santos, A., et al. (2012), National Report: 2012, European Monitoring Centre for Drugs and Drug Addiction, Retrieved from <http://www.emcdda.europa.eu/html.cfm/index214059EN.html>
- Sensible BC (Undated), How Will the Sensible Policing Act Affect Driving While Impaired?, Frequently Asked Questions, Retrieved from <http://sensiblebc.ca/faqs/#q7>
- Sensible Colorado (2013), History of Colorado's Medical Marijuana Laws, Retrieved from <http://sensiblecolorado.org/history-of-co-medical-marijuana-laws/>
- Shukla, R. (2013), Inside the Gate: Insiders' Perspectives on Marijuana as a Gateway Drug, *Humboldt Journal of Social Relations*, Issue 35, Retrieved from <http://www2.humboldt.edu/hjsr/docs/fwhjsrparagraph/Issue%2035%20First%20Article%20Shukla.pdf>
- Single, E., et al. (2000), The Impact of Cannabis decriminalization in Australia and the United States, *Journal of Public Health*, 21(2), pp.157-186, Retrieved from <http://www.parl.gc.ca/content/sen/committee/371/ille/presentation/single-e.htm>
- State of Washington Office of Financial Management (2013), 2013 Population Trends, Forecasting Division, Retrieved from <http://www.ofm.wa.gov/pop/april1/poptrends.pdf>
- Statistics Canada (2009), Chart 5.1: Population Under 25, Canada Year Book, Retrieved from http://www41.statcan.gc.ca/2008/20000/grafx/htm/ceb20000_000_1-eng.htm#table
- Statistics Canada (2014), Estimated Population of Canada, 1605 to Present, Retrieved from <http://www.statcan.gc.ca/pub/98-187-x/4151287-eng.htm>
- Statistics Canada (2014), Population by Year, by Province, and Territory, Summary Tables, Retrieved from <http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo02a-eng.htm>
- Statistics Canada (2013), Table 6: Police Reported Drug Crime for Selected Offences, by Province and Territory, 2013, Retrieved from <http://www.statcan.gc.ca/pub/85-002-x/2014001/article/14040/tbl/tbl06-eng.htm>
- Sullivan, N., et al. (2013), Determination of Pesticide Residues in Cannabis Smoke, *Journal of Toxicology*, Article ID 378168, DOI:10.1155/2013/378168

- The Canadian Press (2013), BC Premier Suggests She Smoked Pot, CBC News, Retrieved from <http://www.cbc.ca/news/canada/british-columbia/b-c-premier-suggests-she-smoked-pot-1.1295753>
- Thomas, G. and Davis, C. (2009), Cannabis, Tobacco, and Alcohol Use in Canada: Comparing Risks of Harm and Costs to Society, *Visions Journal*, 5(4), p.11, Retrieved from <http://www.heretohelp.bc.ca/visions/cannabis-vol5/cannabis-tobacco-and-alcohol-use-in-canada>
- Thompson, P. (2008), Driver Drug Testing in South Australia, 2008 Australasian Road Safety Research, Policing and Education Conference, Retrieved from <http://acrs.org.au/files/arsrpe/RS080012.pdf>
- Tjepkema, M. (2004), Use of Cannabis and Other Illicit Drugs, *Statistics Canada Health Reports*, 15(4), Retrieved from <http://www.statcan.gc.ca/ads-annonces/82-003-x/pdf/4194124-eng.pdf>
- Transform Drug Policy Foundation (2104), How to Regulate Cannabis: A Practical Guide, Retrieved from <http://www.tdpf.org.uk/sites/default/files/How-to-Regulate-Cannabis-Guide.pdf>
- Tyler, P., and Simmons, M. (2014), Cannabis Use and Risky Behaviours and Harms: A Comparison of Urban and Rural Populations in Canada, Canadian Centre on Substance Abuse, Retrieved from <http://www.ccsa.ca/Resource%20Library/CCSA-Cannabis-use-Risky-behaviours-and-Harms-2014-en.pdf>
- United Kingdom Home Office (2014), Drugs: International Comparators, Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/368489/DrugsInternationalComparators.pdf
- United Nations Children's Fund (2013), Child Well-Being in Rich Countries: A Comparative Overview, UNICEF Office of Research, Retrieved from http://www.unicef-irc.org/publications/pdf/rc11_eng.pdf
- United Nations Office on Drugs and Crime (2011), World Drug Report 2011, United Nations, Retrieved from http://www.unodc.org/documents/data-and-analysis/WDR2011/World_Drug_Report_2011_ebook.pdf
- United Nations Office on Drugs and Crime (2014), World Drug Report 2014, United Nations, Retrieved from https://www.unodc.org/documents/wdr2014/World_Drug_Report_2014_web.pdf
- van Beusekom, I., et al. (2002), Guidelines for Implementing and Evaluating the Portuguese Drug Strategy, RAND Europe, Retrieved from http://www.rand.org/content/dam/rand/pubs/monograph_reports/2005/MR1508.pdf

- van Laar, M., et al. (2011), The Netherlands Drug Situation 2011, Netherlands Institute of Mental Health and Addiction, Retrieved from http://www.trimbos.org/~media/English%20site/AF1130%20The%20Netherlands%20Drug%20Situation%202011_web.ashx
- Verstraete, A., et al. (2011), Per se Limits: Methods of defining cut-off values for zero tolerance, Driving Under the Influence of Drugs, Alcohol and Medicines, Retrieved from http://www.bast.de/Druid/EN/deliverales-list/downloads/Deliverable_1_4_2.pdf?__blob=publicationFile
- Washington State Liquor Control Board (2014), Marijuana Sales Activity, Frequently Requested Lists, Retrieved from <http://www.liq.wa.gov/records/frequently-requested-lists>
- Watts, D., et al. (2009), Disrupting Canada's Marijuana Grow Industry: Four Deterrents Intended to Limit a Primary Funding Source for Organized Crime, Retrieved from <http://www.surrey.ca/files/disruptingcanadasmarijuanagrowindustry.pdf>
- Wingrove, J. (2014), Ottawa Considers Softening Marijuana Laws, The Globe and Mail, Retrieved from <http://www.theglobeandmail.com/news/politics/mackay-hints-at-loosening-of-marijuana-laws/article17317503/>

Appendices

Appendix A: Interview Guide

My name is Aaron Bockner and I am a Master's in Public Policy student at Simon Fraser University. As part of my degree, I am writing a thesis, titled "Cannabis in British Columbia: How Can We Take the High Road?", that examines recreational cannabis in British Columbia.

The goals of this interview are: (1) to attain a better understanding about recreational cannabis use in BC, and (2) to explore policy options that will reduce the harms and enhance the benefits that are produced by cannabis legislation in BC.

1. Please state your name, organization, and role within the organization.
2. In your professional capacity, what experiences do you have with cannabis laws?
3. View on why it is illegal to possess cannabis for recreational use.
4. Views on effectiveness and challenges with respect to the following:
 - a) Current legislation surrounding recreational cannabis use in BC;
 - b) Current enforcement of recreational cannabis laws in BC;
 - c) Nationwide decriminalization of recreational cannabis;
 - d) Decriminalization of recreational cannabis in BC;
 - e) Legalization and regulation of recreational cannabis; and
 - f) Increasing enforcement in BC.
5. Is there anything else that you would like to add on the subject?

Appendix B: Sensible Policing Act

Definitions

1. “cannabis” means cannabis, its preparations, derivatives and similar synthetic preparations, including:

(1) Cannabis resin

(2) Cannabis (marihuana)

(3) Cannabidiol (2-[3-methyl-6-(1-methylethenyl)-2-cyclohexen-1-yl]-5-pentyl-1,3-benzenediol)

(4) Cannabinol (3-n-amy-6,6,9-trimethyl-6-dibenzopyran-1-ol)

(5) Nabilone ((±)-trans-3-(1,1-dimethylheptyl)-6,6a, 7,8,10,10a-hexahydro-1-hydroxy-6,6-dimethyl-9H-dibenzo[b,d]pyran-9-one)

(6) Pyrahexyl (3-n-hexyl-6,6,9-trimethyl-7,8,9, 10-tetrahydro-6-dibenzopyran-1-ol)

(7) Tetrahydrocannabinol (tetrahydro-6,6,9-trimethyl-3-pentyl-6H-dibenzo[b,d]pyran-1-ol)

(7.1) 3-(1,2-dimethylheptyl)-7,8,9,10-tetrahydro-6,6,9-trimethyl-6H-dibenzo[b,d]pyran-1-ol (DMHP)

(8) Cannabis seed.

Purpose

2. The purpose of the Act is to reform and strengthen the oversight of policing in British Columbia and to ensure that an adequate and effective level of policing and law enforcement is maintained throughout British Columbia. The Act does so by prioritizing use of police resources toward substantive and serious criminal offences by re-directing

the use of those limited resources in regards to simple possession of cannabis; by initiating a provincial commission to study how the government of British Columbia can properly tax and regulate cannabis once it is removed from the federal Controlled Drugs and Substances Act; and by calling on the Government of Canada to allow the Province to regulate cannabis using lessons learned from alcohol and tobacco.

Effective allocation of provincial police resources, establishment of commission to study cannabis policy and request to Government of Canada to allow Provincial regulation of cannabis

3. The following sections are added to the Police Act, RSBC 1996, chapter 367:

(a) “76. No member of any police force(s) as defined in section 1.1 of this Act may utilize and/or expend any police resources, including member time, on investigations, searches, seizures, citations, arrests and/or detentions related solely to actual or alleged violations of section 4 of the Controlled Drugs and Substances Act (S.C. 1996, c.19) (hereafter “CDSA”), if such violations relate solely to cannabis.”

(b) “77. Any member that utilizes and/or expends any police resources, including member time, on investigations, searches, seizures, citations, arrests and/or detentions related solely to actual or alleged violation of section 4 of the CDSA if such violations relate solely to substances set out in Schedule II to the CDSA must, within seven days after the utilization and/or expenditure of such resource(s), prepare a detailed report to the minister describing the nature, circumstances and outcome of each such utilization of resource(s) including a detailed narrative of the event and the reasons that any member of any police force(s) found the utilization of resource(s) necessary in light of the provisions of section 76 of this Act. The minister shall, within seven days of the preparation of the report, publish the detailed report, with any personal information identifying any member of the public removed, in the manner that the Ministry publishes press releases, on the website of the Ministry and shall keep each report on that website for a minimum of six (6) months.

(c) “78. Within three (3) months from the date of Royal Assent of this Act, the Minister shall write to the Prime Minister of Canada, copying the Attorney General for Canada

and the Minister of Health for Canada, calling upon the federal government to issue an exemption pursuant to section 56 of the CDSA or to take whatever legislative steps are necessary so that the British Columbia government can tax and regulate cannabis using lessons learned from the regulation of alcohol and tobacco.”

(d) “79. Within three (3) months from the date of Royal Assent of this Act, the Minister shall establish a commission to (a) study the impact of the federal prohibition of cannabis and repeal of that prohibition; (b) draft and publish a report setting out the conclusions reached during the study; and (c) recommend changes to provincial and federal law necessary to achieve a legal and regulated model for the production, distribution and possession of cannabis for medical and non-medical consumption by adults.”

Retaining police power to seize cannabis from minors in possession

4. The following section is added to the Liquor Control and Licensing Act, [RSBC 1996] chapter 267:

(a) “34.1. A minor who has cannabis in his or her possession without lawful excuse commits an offence punishable by no more serious sanction than if the minor had alcohol in his or her possession.”

Commencement

5. This Act comes into force on the date of Royal Assent.

Severability

6. If any portion of this Act is determined by a court of competent jurisdiction, after all appeals are exhausted, to be ultra vires the authority of the provincial government or otherwise unenforceable or invalid, that section and that section only shall be severed and all remaining provisions shall continue to be in full force and effect.

Explanatory Note

This Act provides a framework under which British Columbia can achieve its provincial purposes of reducing and deterring crime, minimizing the costs of crime, compensating past victims of crime and maximizing the health of residents of the Province. It does so by amending the Police Act to no longer utilize and/or expend provincial resources on investigations, searches, seizures, citations, arrests and/or detentions related solely to actual or alleged violations of the prohibition on simple possession of cannabis. It does not repeal or seek to repeal the federal prohibition on cannabis but, rather, allocates the use of police resources and discretion effectively and in a manner determined by the provincial government. It also sets up a system by which police officers must report any police activity related to simple possession of cannabis and explain why that activity was necessary, and where the Minister is required to make those reports available to the public. It calls upon the Minister to urge the federal government to remove cannabis from the Controlled Drugs and Substances Act and to allow provinces to implement non-criminal regulations governing the production and distribution of cannabis and requires the establishment of a commission to study the impact of cannabis prohibition and its repeal. Finally, it ensures that minors in possession of cannabis remain subject to police enforcement in the same manner that minors unlawfully possessing alcohol are subject to enforcement.

Appendix C: Cannabis Regulation Model

In 2014, the Transform Drug Policy Foundation published a guide on how to regulate cannabis. The recommendations of this UK organization are outlined in Table 6.

Table 6: Policy Framework for Cannabis Regulation

<p>Production</p>	<ul style="list-style-type: none"> • Commercial producers licensed by government agency that acts as sole buyer and supplier • Commercial producers compete for government tender • Government agency specifies nature and potency of products and monitors quality control
<p>Preparation</p>	<ul style="list-style-type: none"> • Range of quality and potency controlled products • Product initially an approximate mirror image of pre-reform illicit market • Changes to market range introduced incrementally (and carefully monitored) • Controls on available preparations aim to encourage safer using behaviours • Wider range of products available via home grow or cannabis social clubs
<p>Potency</p>	<ul style="list-style-type: none"> • Range of products with various potencies available • Safer THC:CBD ratios • Specialist demand for non-retail products via home grow or cannabis social clubs
<p>Price</p>	<ul style="list-style-type: none"> • Parameters set by government agency • Initially maintaining price at or near illicit market levels • Higher prices on more risky products to encourage safer consumption behaviours • Changes in price incremental and based on thorough impact monitoring
<p>Age Access Threshold</p>	<ul style="list-style-type: none"> • Decision shaped by local cultural and political environment

Purchaser Restrictions	<ul style="list-style-type: none"> • Limits on individual transactions to minimize bulk buying and potential re-sales • Residents only or membership access may be appropriate under certain local circumstances
Vendor	<ul style="list-style-type: none"> • Required to adhere to licensing conditions and subject to penalties for licence violations (e.g. fines or loss of licence) • Mandatory training requirements for retail vendors, with additional training for vendors in sale and consumption venues
Outlet	<ul style="list-style-type: none"> • Controls on location and hours of operation, determined by municipal government and local community input • Cannabis only sales (no alcohol or other drugs) and food and drink sales
Tax	<ul style="list-style-type: none"> • Tax models built into price controls • Tax rates locally determined • Proportion of tax could be earmarked for otherwise non-funded social/community spending
Marketing	<ul style="list-style-type: none"> • Default ban on all forms of marketing and promotions
Driving	<ul style="list-style-type: none"> • Clear message that cannabis-impaired driving is risky and illegal • Effect-based standard for prosecutions centred around field sobriety testing • Blood tests to prove recent use once probable cause has been established • Thresholds for blood THC levels subject to review in light of emerging evidence
Home Growing	<ul style="list-style-type: none"> • Allowed for adults within certain parameters • Aim is to protect minors and prevent for-profit secondary sales • Licensed cannabis social clubs operate under formal regulation