

THE RELATIONSHIP BETWEEN LEGAL GAMBLING AND CRIME IN ALBERTA

JENNIFER N. ARTHUR

Bachelor of Arts, University of Lethbridge (2007)

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Abstract

The legal gambling industry in Alberta has rapidly expanded over the last three decades. One of the main justifications that the Alberta government uses for this expansion is that gambling provides increased revenue to governments and community groups which is then used to fund public programs. However, critics argue that the social costs of legal gambling offset these benefits. One particularly controversial social cost of gambling is the impact that gambling has on crime. The academic literature is split with as many studies showing an increase in crime due to gambling as those that show no impact. The current study investigated how increased legal gambling availability has affected crime in Alberta. Four different sources of data were examined: the self-reports of gambling-related crime among problem gamblers in population surveys, mentions of gambling-related crime in police incident reports, uniform crime statistics from Statistics Canada, and information supplied by the Alberta Gaming and Liquor Commission (AGLC). The most unambiguous findings of this study are that gambling-related crime constitutes a very small percentage of all crime; crime that is gambling-related tends to be non-violent property crime; and increased legal gambling availability has significantly decreased rates of illegal gambling. In terms of the impact of legalized gambling on overall crime in Alberta, the evidence would suggest that legalized gambling likely has a minor or negligible impact.

Acknowledgements

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Table of Contents

| | |
|--------------------------------------------------------------|-----------|
| Title Page..... | i |
| Signature Page..... | ii |
| Abstract..... | iii |
| Acknowledgements..... | iv |
| Table of Contents..... | vi |
| List of Tables..... | ix |
| List of Figures..... | x |
| | |
| Chapter 1. Introduction..... | 1 |
| A Brief History of Legal Gambling in Canada and Alberta..... | 1 |
| Current Gambling in Alberta..... | 3 |
| Regulation..... | 3 |
| Raffles, Bingo, Casinos..... | 4 |
| Lottery Tickets and Video Lottery Terminals..... | 5 |
| Horse Racing..... | 6 |
| Availability..... | 6 |
| Revenue..... | 10 |
| Net Revenue..... | 10 |
| Recipients of Net Gambling Revenue..... | 11 |
| Gambling as a Percentage of Gross Domestic Product | 12 |
| Adult Gambling Expenditure..... | 13 |
| Does Increased Legal Gambling Increase Crime?..... | 15 |
| | |
| Chapter 2. Gambling and Crime Literature Review..... | 19 |
| Decreased Illegal Gambling?..... | 19 |
| Increased Rates of Criminogenic Problem Gambling?..... | 22 |
| Crime Occurs in a Percentage of Problem Gamblers..... | 23 |

| | |
|--------------------------------------------------------------------------------------|-----------|
| Increased Gambling Availability Leads to Increased Problem Gambling..... | 26 |
| Impacts on Crime Through the Provision of Gambling Venues..... | 28 |
| Excluding the Population at Risk..... | 31 |
| Including the Population at Risk..... | 33 |
| Literature Review Summary..... | 38 |
| Chapter 3. Methodology..... | 40 |
| Population Surveys..... | 40 |
| Methodology..... | 42 |
| Samples..... | 44 |
| Questionnaires..... | 45 |
| Criminogenic Problem Gambling Prevalence Rates..... | 46 |
| Police Records..... | 47 |
| Alberta Gaming and Liquor Commission Data..... | 49 |
| Statistics Canada Data..... | 51 |
| Chapter 4. Results..... | 53 |
| Population Surveys..... | 53 |
| Police Records..... | 55 |
| Alberta Gaming and Liquor Commission Data..... | 60 |
| Statistics Canada Data..... | 62 |
| Chapter 5. Discussion and Conclusions..... | 64 |
| What Portion of Problem Gamblers Commit Crime to Support their Gambling Habit? | 64 |
| Does Gambling Addiction Cause the Gambling-Related Crime?..... | 65 |
| What Portion of Overall Crime is Attributable to Problem Gambling?..... | 66 |
| What Type of Crime is Associated with Gambling? | 67 |

| | |
|------------------------------------------------------------------------------------------|------------|
| Has Increased Legal Gambling Availability Decreased Illegal Gambling... | 68 |
| Has the Introduction of Legalized Gambling Increased Overall Crime in Alberta..... | 69 |
| References..... | 71 |
| Appendix A. 2008 and 2009 Alberta Population Surveys..... | 81 |
| Appendix B. Problem and Pathological Gambling Measure (PPGM)..... | 118 |
| Appendix C. PPGM Scoring and Classification..... | 120 |
| Appendix D. Lethbridge Regional Police Services Confidentiality Agreement..... | 121 |

List of Tables

Chapter 1

| | | |
|------------|----------------------------------------------------------------|----|
| Table 1.1. | Current Availability and Provision of Gambling in Alberta..... | 7 |
| Table 1.2. | Gambling as a Percentage of Alberta GDP..... | 13 |

Chapter 3

| | | |
|------------|-----------------------------------------|----|
| Table 3.1. | Samples for the Population Surveys..... | 44 |
|------------|-----------------------------------------|----|

Chapter 4

| | | |
|-----------|-------------------------------------------------------------------------|----|
| Table 4.1 | Criminogenic Problem Gambling Among 403 Problem Gamblers..... | 53 |
| Table 4.2 | Reported Criminal Offences as a Function of City and Year..... | 56 |
| Table 4.3 | Criminal Charges Laid by Inspectors from the Gaming Control Branch..... | 61 |

List of Figures

Chapter 1

| | | |
|------------|---------------------------------------------------------------------------------------------------|----|
| Figure 1.1 | Total Net Alberta Gambling Revenue..... | 10 |
| Figure 1.2 | Proportion of Total Net Alberta Gambling Revenue Ultimately Received by Different Sectors..... | 12 |
| Figure 1.3 | Per Adult Net Gambling Expenditure..... | 14 |

Chapter 4

| | | |
|------------|-----------------------------------------------------------------------------------|----|
| Figure 4.1 | Incidents of Illegal Gambling per 100,000 Albertans as a Function of Year..... | 63 |
|------------|-----------------------------------------------------------------------------------|----|

Chapter One: Introduction

A Brief History of Legal Gambling in Canada and Alberta

Gambling has always been present in Canadian society. However, depending on the time period, it has been either part of cultural customs, a deviant illegal behaviour, or part of a legal adult social pastime. Prior to European contact, gambling was an important part of First Nations culture, having ritual significance in ceremonies, as part of friendly competition between tribes, and as a recreational pastime (Belanger, 2011; Binde, 2007; Culin, 1907). These gambling games consisted of various contests of physical skill, guessing games, and 'dice' games (Culin, 1907).

Early European settlers gambled for recreational purposes and engaged in many of the same forms of gambling we see today: card and dice games, betting on horses, cock fights, prize fights, as well as lotteries and raffles. However, gambling was generally frowned upon by many elements of Canadian society. This was reflected when the first *Criminal Code of Canada* was produced in 1892, which prohibited all forms of gambling with minor exceptions for social gambling between individuals, small raffles for charitable purposes, and on-site horse race betting. Legal prohibition of gambling continued for some time, although exceptions were made for bingo in the 1920s, and midway carnival games in the 1930s (Williams, Belanger, and Arthur, 2011).

Canadians started viewing gambling more as a form of legitimate recreational entertainment in the 1950s and 1960s. This was reflected by an important 1969 change in the *Criminal Code of Canada*, making it legal for the first

time for both federal and provincial governments to operate “lottery schemes” (this new law also allowed provincial governments to issue gambling licenses to charities or religious groups). This set the stage for a major expansion of legal gambling and for the provinces and charity/community groups to become major stakeholders in its provision.

The first Canadian national lottery was held in 1973 to pay for the 1976 Montreal Olympics. British Columbia, Alberta, Saskatchewan, Manitoba, and the Yukon Territory formed the Western Canada Lottery Foundation and the first provincial lottery ticket was issued in Alberta in 1974. In the early 1970s, multi-day casinos began to be held by Alberta charities and agricultural fairs. Instant win tickets (pull tickets) are legally offered for the first time by Alberta charity groups in 1975. Dedicated bingo halls were in operation in Alberta by 1979. Alberta’s first permanent casino opened in Calgary in 1980. A Criminal Code amendment permits phone-in horse race betting in 1982. Another amendment permitted legal sports betting, with sports betting tickets first being sold in 1984 (Williams, Belanger, and Arthur, 2011).

The growth of legal gambling accelerated, when an additional change to the Canadian Criminal Code in 1985 gave provinces complete autonomy over the provision of gambling, as well as expanding the definition of what constituted a “lottery scheme” to include forms of gambling that operated electronically. As a result, teletheatre (off-track horse race) betting was introduced in Alberta in 1990, video lottery terminals (VLTs) were introduced into bars and lounges in 1992, satellite bingo began operation in 1996, and slot machines were introduced into

casinos for the first time in 1996. These introductions were also coincident with a major expansion in the number of casinos and bingo halls (Williams, Belanger, and Arthur, 2011).

Current Gambling in Alberta

Regulation.

Currently, the regulation and management of gambling in Alberta is primarily a responsibility of the Alberta Gaming and Liquor Commission (AGLC); a Crown Corporation acting as an agent of the Government of Alberta. The AGLC consists of seven divisions that report to the AGLC Board through the Chief Executive Officer. The AGLC Board Chair reports to the Solicitor General and Minister of Public Security. All Alberta gambling regulations are governed by the *Criminal Code of Canada*, the *Alberta Gaming and Liquor Act*, the *Alberta Gaming and Liquor Regulation*, and policies that are established by AGLC (AGLC, 2012).

The AGLC employs a “charity model” of gambling, meaning that a large portion of the revenue collected from gambling activities goes toward supporting charities. Since the 1980s the AGLC has expanded the meaning of ‘charitable group’ and ‘charitable gaming’ to include a wide range of community organizations whose purpose is to promote local sport, educational initiatives, arts, community associations, ethno-cultural groups, nature conservation, hobby/social groups, and historical preservation.

There are two ways that charities can benefit from gambling revenue. First, by hosting a raffle, bingo, or casino and directly receiving a portion of the revenue. Second, by applying for a grant from the Alberta Lottery fund (ALF). All revenue that

the Alberta government receives from gambling activity is funneled into the ALF. Since its inception in 1998, an average of 21% of ALF revenue has been distributed to Alberta charities in the form of grants (actual percentage varying year to year). A list of grants awarded can be obtained from the Alberta Lottery Fund website www.albertalotteryfund.ca. The remaining 79% of ALF revenue is used to fund government programs such as health care, community development, and social services (AGLC, 2012; Williams, Belanger, and Arthur, 2011).

Raffles, bingo, and casinos.

In accordance with the *Criminal Code of Canada*, 'charity groups' can apply for a license to host a raffle, bingo, or casino event. Fees for the licenses are dependent on the type of license the charity is applying for and by the total value of the prize being awarded. All net revenue from raffles and bingos go to the licensee (AGLC, 2012).

Casinos in Alberta are owned and staffed by private individuals, corporations, and/or First Nations groups. However, the slot machines within the casino (or racetrack) are owned by the AGLC, and the actual gambling activity within the casino is hosted by a series of charity groups from the local region who hold two day 'casino events'. The casino owner receives 50% to 75% of the table game revenue (depending on the game type and location and size of the casino) with the remainder going to the host charity. Thirty percent of the slot machine revenue is divided evenly between the host charity and casino owner with the remaining 70% going to the ALF (AGLC, 2012).

First Nation casinos operate under the same regulations as Non-First Nations casinos with a couple of important differences. First, rather than two-day casino events hosted by outside charities, the host First Nation can provide a single in-house charity that provides a year round charity event. Second, net revenues from slot machines are divided slightly differently. The 70% of revenues that would normally go to the Alberta government is divided between the government and the First Nations Development Fund (FNDF)¹; 30% and 40% respectively. Monies from the FNDF are designated to First Nation communities for the purposes of economic, social, and community development. FNDF are divided amongst all First Nation communities with 75% going to the First Nation communities that host the casinos and 25% going to all other First Nation communities (AGLC, 2012).

Lottery tickets and video lottery terminals.

The AGLC in conjunction with the Western Canada Lottery Corporation (WCLC) provides and markets all provincial lotteries (e.g., Lotto 649), sports betting (e.g, Sports Select), and instant win (scratch) tickets. In addition, WLCL offers national lotteries (e.g., Lotto Max) by partnering with the Interprovincial Lottery Corporation (ILC). Lottery ticket retailers receive 6.5% of the revenue, whereas 52% of revenues are distributed as prizes, 33% of revenues are distributed among the provinces and territories, and 7.8 % goes to the WCLC for operating costs (AGLC, 2012).

Video lottery terminals (VLTs) are owned, operated and maintained by the AGLC. Machines are programmed to payout 92% of what is wagered. Fifteen

¹ Established in 2001.

percent of the gross profit of each machine is paid to the establishment owner and the remaining 85% profit is sent to the ALF (AGLC, 2012).

Horse racing.

Horse racing is not directly regulated by AGLC. Rather, a private organization, Horse Racing Alberta (HRA), governs, operates, and markets all aspects of horse racing in Alberta. Consequently, horse racing revenue is kept within the horse racing industry rather than going to the ALF. The exception to this is slot machine revenue at racetracks, where 33.3% goes to the ALF, 51.7% to HRA, and 15% to the host racetrack. Furthermore, the Criminal Code Of Canada requires that *parimutuel betting* be regulated by the federal department of agriculture. The Pari-Mutuel Agency (CPMA) is the arm of Agriculture and Agri-Food Canada that currently serves this function. This agency is directly funded through a levy of 0.8% on each bet placed.

Availability.

A summary of the current availability and provision of legal gambling is contained in Table 1.1 (this table is taken from Williams, Belanger, and Arthur, 2011).

Table 1.1 Current Availability and Provision of Gambling in Alberta

| TYPE | Sub-Type | Provision | Details |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Horse Race Betting² | On-site betting at a Horse Race Track | Private Operator | <ul style="list-style-type: none"> • 5 tracks operational in 2011: Northlands Park (Edmonton); Whoop-Up Downs (Lethbridge); Evergreen (Grande Prairie); Alberta Downs (Lacombe); Millarville (1 day/yr) • 260 live race days in 2009 • 3 tracks also have slot machines ('Racing Entertainment Centres'): Northlands; Whoop-Up Downs; Evergreen. 15% of net slot revenue goes to the racetrack; 51.7% to HRA; and 31.7% to the Alberta government (Alberta Lottery Fund). |
| | On-site betting at a Teletheatre of a televised broadcast of a North American, Asian, or Australian horse race. | Private Operator | <ul style="list-style-type: none"> • 38 teletheatres operational in 2010 • Some teletheatres also contain VLTs |
| | Online or telephone betting on North American horse races | Private Operator | <ul style="list-style-type: none"> • Online bets taken at HorsePlayer Interactive in Ontario³ • Phone-in bets to Alberta race tracks also possible. |
| Raffles | 'Charity' Raffles | Community Organizations | <ul style="list-style-type: none"> • 6633 raffle licences issued by the provincial government in 2011 |
| Pull Tickets | 'Charity' Instant Win Pull Tickets | Community Organizations | <ul style="list-style-type: none"> • 422 pull-ticket licences issued by the provincial government in 2011 |

² Subtypes of thoroughbred racing (oval track), quarter horse racing (straight track), and harness racing (also known as standardbred racing).

³ The legality of placing online bets on horse racing outside of one's province is unclear. Thus far no one has been prosecuted.

| | | | |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bingo | Traditional bingo | Bingo Associations (groups of Community Organizations) or individual Community Organizations or a Private Bingo Hall (contracted with a Community Organization(s)) | <ul style="list-style-type: none"> • 28 licensed bingo halls (1 private) and dozens of community halls in 2011 • 1400 bingo licences issued by the provincial government in 2011 • 20 halls provide electronic devices for recording numbers called (DIGI bingo) • Electronic keno available in some bingo halls |
| | Linked Bingo where several bingo halls are linked-in to one large bingo event (held live in Caesar's Bingo in Edmonton) via satellite broadcast. | Private satellite broadcaster contracts with Bingo Associations &/or individual Community Organizations | <ul style="list-style-type: none"> • 59 participating bingo halls as of March 2011 |
| | Electronic Keno (a variant of bingo) | A WCLC managed, conducted, and operated activity provided in private casinos and community-owned bingo halls | <ul style="list-style-type: none"> • Random draw electronically posted every 5 minutes in participating casinos and bingo halls |
| Lotteries and Instant Win (Scratch) Tickets | Traditional Lotteries | Private retailers (e.g., gas stations, stores) receive small commission for selling Provincial Government tickets | <ul style="list-style-type: none"> • 2562 retailers in 2011 • 6 games with tickets costing \$1 to \$5: Lotto Max; Lotto 6/49; Western 649; Payday; Extra; Pick 3 • Possible to purchase subscription whereby you automatically purchase ticket with your numbers each draw and credit card automatically debited. |
| | Instant Win Scratch Tickets | Private retailers (e.g., gas stations, stores) receive small commission for selling Provincial Government tickets | <ul style="list-style-type: none"> • 2562 retailers in 2011 • 21 games with tickets costing \$1 to \$20 |

| | | | |
|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sports Betting | Sports Select | Private retailers (e.g., gas stations, stores) receive commission for selling Provincial Government tickets | <ul style="list-style-type: none"> • 2562 retailers in 2011 • 7 types of bets ranging from \$2 to \$100: <i>Pro-Line</i> requires picking winner of 3 to 6 games; <i>Over-Under</i> requires picking whether score will be over or under predicted score for 2 to 10 games; <i>Point-Spread</i> requires predicting whether favourite will exceed predicted win margin or underdog will 'beat' predicted loss margin for 2 to 12 games; <i>Double Play</i> and <i>Combo Play</i> are combinations of these above bets; <i>Pools</i> players compete against other sports fans to predict the outcome of games on the Pools card; <i>Props</i> requires sports fans pick player to player matchups including propositions for hockey points, baseball hitters and rushing yards. • Betting permitted on hockey, football, baseball, basketball, soccer, and golf. |
| Video Lottery Terminals | Video Lottery Terminals in Lounges | Privately owned lounges receive a commission for providing these provincially owned and operated machines | <ul style="list-style-type: none"> • 5982 VLTs (number capped at 6000 in 1995) • 1000 VLT locations (includes 75 Video Gaming Entertainment Rooms where 15 or more VLTs are contained) in 2011 |
| Slot Machines, Table Games, and Casinos | Slot Machines in Casinos and Race Tracks | Privately owned casinos and race tracks receive a commission for providing these provincially owned and operated machines | <ul style="list-style-type: none"> • 12,873 slot machines in 2010 • 24 casinos (19 Traditional; 5 First Nation) in 2011 • Electronic Keno offered in some casinos |
| | Casino Table Games: Roulette, Blackjack, Poker, Baccarat, Red Dog, Craps, Sic-Bo, Pai Gow Tiles | Privately owned casinos receive a commission for providing these Community Organization provided gambling activities. | <ul style="list-style-type: none"> • 3446 charitable casino licences issued by provincial government in 2011 • 24 casinos (19 Traditional; 5 First Nation) in 2011 • Electronic Keno offered in some casinos |
| Internet Gambling | Not legally available in Alberta as of 2012. If it was provided it would have to be provided by the provincial government as it is an electronic form of gambling. | | |

*Table reproduced from Williams, Belanger, and Arthur (2011) with permission from authors.

Revenue.

Net revenue.

Net gambling revenue in Alberta over time is seen in Figure 1.1 (these amounts are adjusted for inflation). As can be seen, there has been a dramatic increase in revenue over time, with an especially large increase in the 1990s, due to the introduction of VLTs in 1992 and then slot machines in 1996. The year 2009 is also notable, as this is the first year that revenue was down from the previous year. This downward trend continued in 2010, likely due to economic recession or gambling market saturation.

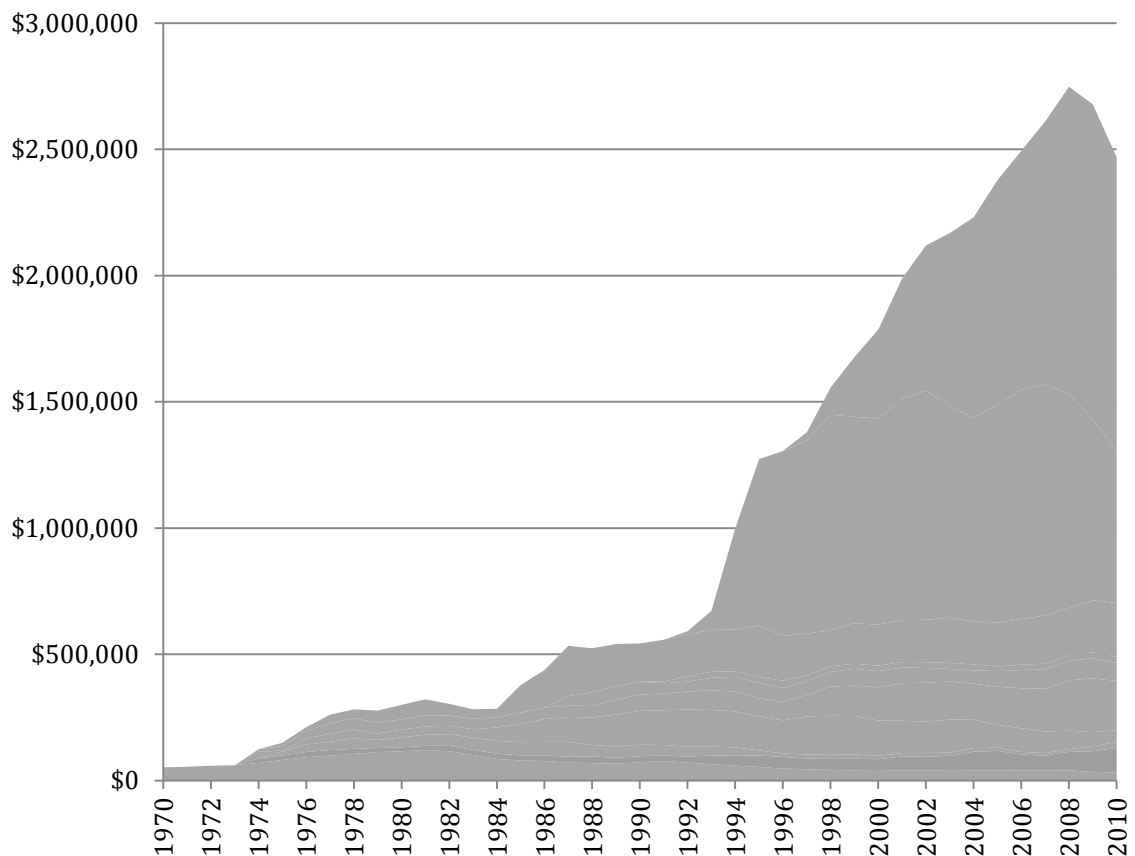


Figure 1.1 Total Net Alberta Gambling Revenue
(after prizes but before expenses; in thousands of 2010 dollars)

** Reproduced from Williams, Belanger, and Arthur, 2011 with permission from the authors*

Recipients of net gambling revenue.

Figure 1.2 illustrates that the provincial government has received the largest segment of gambling revenue since 1995. Since 1995 its percentage of the total has ranged from 41% to 58% (47% in 2010). Charity groups have been the second largest recipient since 1995, with their portion of the total since 1995 ranging from 22% to 32% (28% in 2010). Private operators (casino owners, lounges hosting VLTs, lottery ticket retailers) have been the third largest recipient, with their portion of total gambling revenue since 1995 ranging from 13% to 22% (16% in 2010). In the past couple of years First Nations revenue has grown significantly and they now receive approximately 6% of Alberta gambling revenue. The fifth largest recipient is the horse racing industry. The proportion of gambling revenue derived from horse racing has declined significantly since the 1980s (when it was as high as 21%) and now only constitutes about 2% of revenue. Finally, the federal government has always received the smallest proportion of net Alberta gambling revenue (ranging from 1 – 2%), and currently represent about 1% of the total.

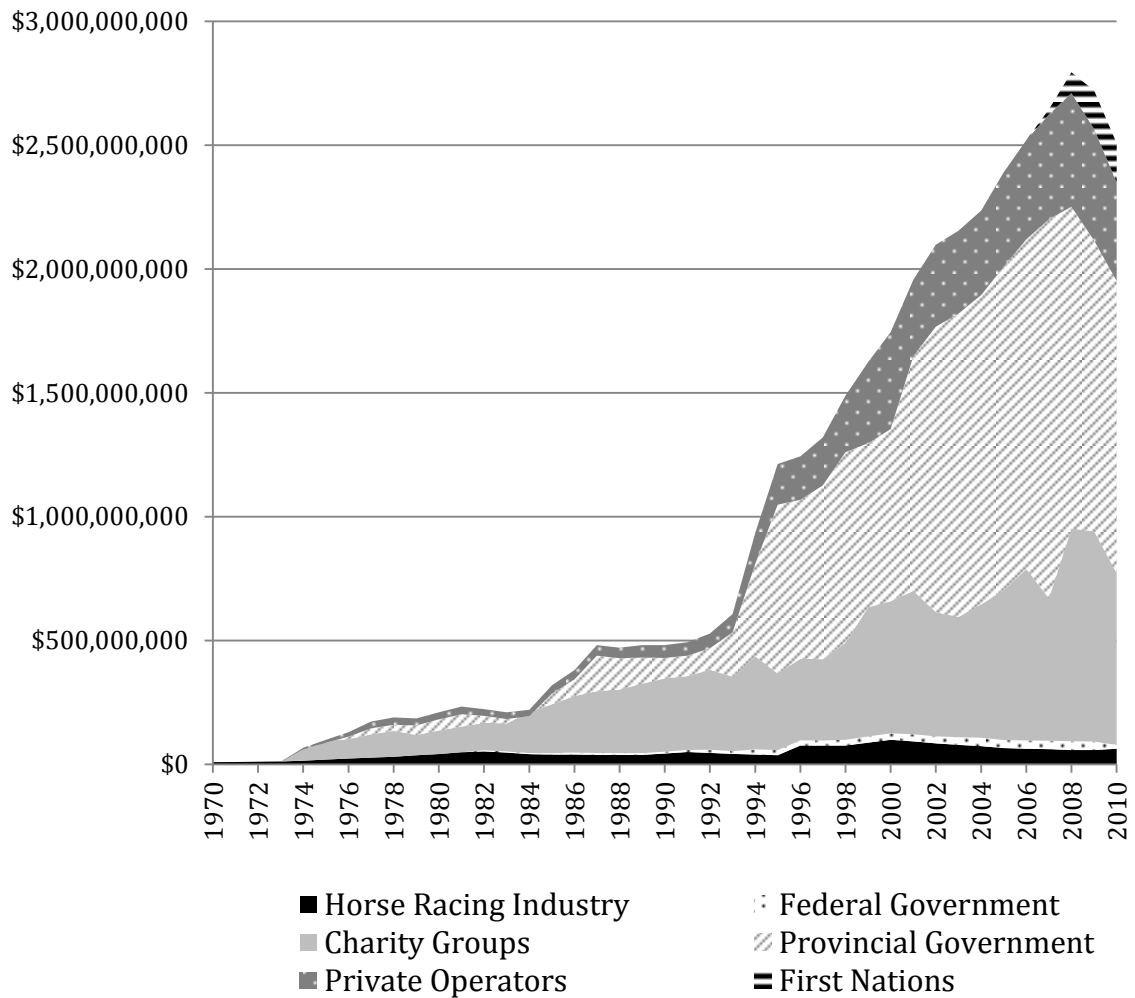


Figure 1.2: Proportion of Total Net Alberta Gambling Revenue Ultimately Received by Different Sectors (in 2010 dollars).

** Reproduced from Williams, Belanger, and Arthur, 2011 with permission from the authors*

Gambling as a percentage of gross domestic product (GDP).

In the context of the larger Alberta economy, gambling represents a very small portion of the overall economic activity in the province. Table 1.2 shows the annual estimates of production in the gambling industry (excluding casino hotels) and total provincial GDP in Alberta, expressed in current prices over the period 1997-2006 (Statistics Canada stopped producing these estimates after 2006). As can

be seen, the value of goods and services produced by the gambling industry grows significantly over this time period. However, as a percentage of total GDP in each year, the amount is quite small (0.09% to 0.15%). By comparison, the gas and oil extraction industry accounted for about 15% of the goods and services produced in the province in 2006.⁴

Table 1.2 Gambling as a Percentage of Alberta GDP

| Year | Gambling Industry | All Industries | Gambling as % of Total |
|------|-------------------|-------------------|------------------------|
| 1997 | \$194,400,000 | \$192,876,300,000 | 0.10% |
| 1998 | \$217,400,000 | \$195,946,500,000 | 0.11% |
| 1999 | \$251,200,000 | \$211,973,600,000 | 0.12% |
| 2000 | \$289,000,000 | \$261,375,100,000 | 0.11% |
| 2001 | \$292,500,000 | \$276,632,500,000 | 0.11% |
| 2002 | \$396,700,000 | \$275,444,000,000 | 0.14% |
| 2003 | \$412,100,000 | \$303,731,900,000 | 0.14% |
| 2004 | \$512,400,000 | \$338,256,600,000 | 0.15% |
| 2005 | \$370,000,000 | \$390,542,700,000 | 0.09% |
| 2006 | \$440,900,000 | \$432,708,000,000 | 0.10% |

*Source: Statistics Canada Table 381-0016 Provincial Gross Output at Basic Prices in Current Dollars.

Adult gambling expenditure.

Although it is clear that gambling represents a relatively small economic activity within the Alberta economy, *personal* expenditures only account for part of GDP. Thus, it is also important to also look at *per capita expenditure* on gambling to appreciate the potential magnitude/importance of gambling expenditures at the individual level. Figure 1.3 shows the per adult gambling expenditure as a function of year. All these figures have adjusted for inflation to show what their values would be in 2010 dollars. Similar to the findings for Total Net Revenue, there has been a

⁴ In terms of Alberta government revenue, gambling constitutes ~5 % whereas resource and investment revenue constitutes ~ 40% (Williams, Belanger, & Arthur, 2011).

marked rise in per adult expenditure. Current expenditures are almost five times higher than expenditures in the 1970s. Most of this increase has occurred since the early to mid 1990s. Also similar to Total Net Revenue, there has been a decrease in per adult expenditure since its peak in 2008.

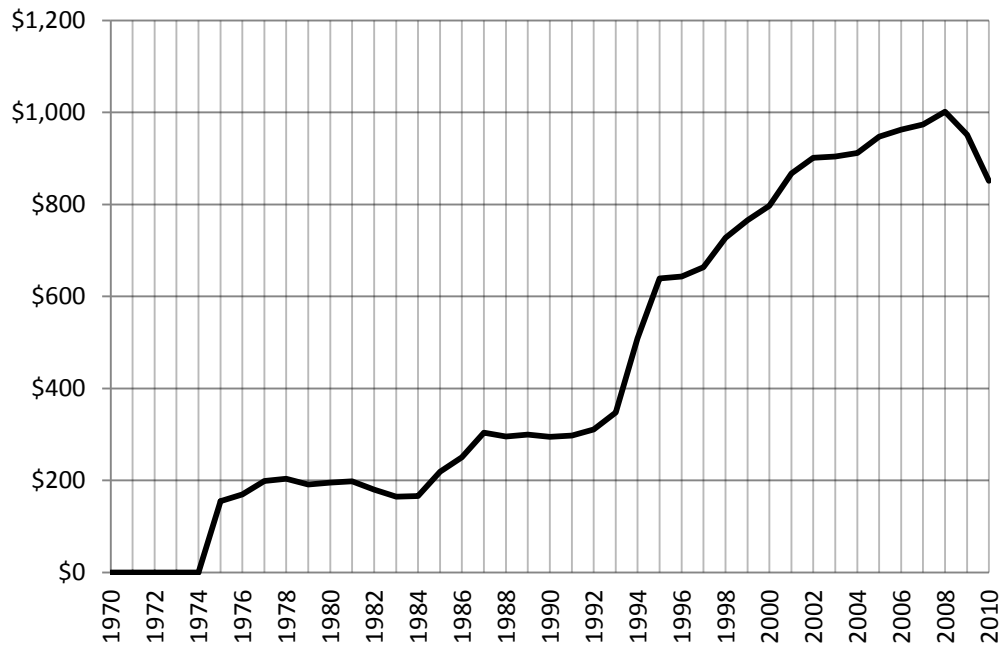


Figure1.3 Per Adult Net Gambling Expenditure (in 2010 Dollars)

** Reproduced from Williams, Belanger, and Arthur, 2011 with permission from authors.*

Does Increased Legal Gambling Increase Crime?

There seems to be a general perception that increased gambling availability will automatically increase crime (Smith and Wynne, 1999). This perception most likely stems from the well-publicized role that organized crime had in the provision of legal gambling in Nevada when it was first introduced.

Perhaps less well known is the fact that the U.S. government subsequently introduced regulations that effectively eliminated organized crime from commercial gambling in Nevada (and the rest of the United States) (Ferentzy and Turner, 2009). One of the important pieces of legislation was the 1970 Racketeer Influenced and Corrupt Organizations Act (RICO). The RICO act allowed for leaders of crime syndicates to be charged and tried for crimes that they themselves did not personally commit and permitted seizure of their assets.

Ferentzy and Turner (2009, p. 122) describe that:

By 1999, the National Gambling Impact Study Commission (1999, p. 3-1) confidently stated that effective state regulation and the takeover of much of the gambling industry by public corporations had eliminated organized crime from the direct ownership and operation of casinos. This new "era" can loosely be identified with the late 1970s and the sanitization of gambling in Las Vegas. Between 1980 and 1996, Las Vegas reported a 41% decrease in its crime rate (Hsu, 1999). This transition from mob-run gambling to corporate gambling is described by Pileggi (1995; see also de Fina and Scorsese, 1995)... Some commentators have claimed, however, that organized crime still plays a

major role in Vegas, albeit more clandestinely (Johnson, 1992; Johnston, 1992; Mahon, 1980). These sources, however, are dated, and current organized crime involvement in the Las Vegas casino industry might no longer be as significant as it is alleged to have been in the 1980s and early 1990s.

It is also important to recognize that the Canadian gambling industry has different origins than in the United States. Whereas gambling was introduced by private operators in the U.S., it was introduced by the federal and provincial governments in Canada. This early government involvement has left little room for large-scale organized crime gambling involvement. This is especially true considering that Canada adopted many of the regulatory practices instituted in the United States (e.g., gambling employees cannot have a criminal record). In Alberta, the AGLC regulatory branch has expansive resources at hand to ensure that legal gambling operations conduct business lawfully. Should a gambling operator diverge from legal gambling practices, AGLC has the capacity to impose hefty fines, or revoke gambling licenses.

A conflict of interest does exist insofar as the government of Alberta is the major financial beneficiary of gambling, as well as the regulator (i.e., in the form of the AGLC). This self-regulation requires Alberta to police itself and is not ideal for optimal adherence to ethical business practices. That being said, there has been no evidence of large-scale improprieties stemming from the Alberta government's involvement in gambling (Williams, Belanger, and Arthur, 2011).

Although Alberta legal gambling operations are arguably well-regulated and policies strictly enforced, there is still a general sentiment that increased gambling is associated with increased crime (Smith & Wynne, 1999). Another source for this belief could be the frequent police and media contentions that an association exists between the two. One Royal Canadian Mounted Police (RCMP) Assistant Commissioner stated that government gambling would inevitably increase rates of money laundering, loan sharking, extortion, and fraud (Proke, 1994). In a review of gambling-related print media articles published in western Canada, Smith and Wynne (1999) concluded that the media view topics related to gambling and crime as “sexy” topics that sell newspapers. Furthermore, many of these articles are based on opinions and anecdotes rather than empirical evidence; thereby, creating an over representation of gambling-related crime articles, leading readers to believe gambling-related crime is more rampant than it may actually be. Similarly, Turner, Fritz, and Zangeneh (2007) found that references to organized crime were quite numerous in contemporary Hollywood films about gambling.

Governments have an obligation to minimize the harms and maximize the benefits of government-provided gambling. Although much of the money raised through government-provided gambling goes to support the public good, this revenue generation needs to be examined in the context of the social costs. If the tradeoff for increased government revenues has high social costs (e.g., increased problem gambling, suicides, bankruptcy, crime...), the strong revenues may come at too high of a price. Having accurate data on how and to what extent gambling impacts crime rates is a critical piece of understanding these potential social costs.

Until recently there has been no comprehensive research on the impacts that expanded legal gambling has had on Alberta. This situation was rectified with a comprehensive three-year study of this issue, culminating in the 2011 publication: *Gambling in Alberta: History, Current Status, and Socioeconomic Impacts* by Robert Williams, Yale Belanger, and Jennifer Arthur. This is also known as the Social and Economic Impacts of Gambling in Alberta (SEIGA) project. As part of this study, there was a comprehensive analysis of the impact of the increased legal availability of gambling on crime in Alberta, with the crime impact subsection of the report headed by the present author. This evidence is re-examined and presented in this thesis.

The foregoing introduction provides an overview of the context and rationale for this research. Subsequent chapters provide a more in-depth examination of the issues. Chapter 2 is a comprehensive review of the literature and the varying theoretical underpinning used in this line of research. Chapter 3 details the specific methodology employed. Results are presented in Chapter 4, and Chapter 5 contains the discussion and conclusions derived from the empirical analysis.

Chapter 2: Gambling and Crime Literature Review

A recent review was conducted of the 49 studies that have examined the impact of legal gambling on crime rates (Williams, Rehm and Stevens, 2011). In general, the results of this review are mixed, with most studies finding an increase in crime rates, but a significant minority finding no impact. When increases are found, the magnitude of these increases is modest, and spurious variables may account for these increases (Williams, Rehm, and Stevens, 2011; Miller and Schwartz, 1998).

To better understand this mixed pattern of results, it is useful to explore in detail the mechanisms by which legal gambling could impact crime rates. There are three primary ways in which this could occur. The first is by decreasing the prevalence rate of illegal gambling. The second is by increasing the prevalence of problem gambling, recognizing that a percentage of problem gamblers commit crime to support their gambling (“criminogenic problem gambling”). The third is that the creation of gambling venues may provide additional opportunities for crime to occur. Each of these potential impacts are reviewed in the present chapter.

Decreased Illegal Gambling?

In the past 30 years, gambling in most western countries has moved from restricted to regulated gambling. A significant part of the rationale for government legalization of gambling was to reduce illegal gambling and to divert illegal gambling revenues into government coffers. By creating legal opportunities to gamble, theoretically, illegal gambling should decrease, because gamblers would have no motivation to patronize illegal forms of gambling.

However, this relationship may not be as straightforward as it seems. There are several things that an individual might consider in deciding whether to patronize legal versus illegal gambling venues. The most obvious attraction of legal gambling is its legality, as well as the fact that the gambler can have some assurance that the games are fair and that the posted odds are accurate. However, illegal gambling still has an opportunity to exist if it can offer features that the legal gambling does not. For one, it can provide higher stakes gambling than is legally allowed. For another, it may provide credit-based gambling, which is prohibited in most jurisdictions. It could provide longer hours of operation. It could provide forms of gambling that may not be legally available (e.g., single event sports betting, electronic gambling machines operating outside of a dedicated gambling venue, dog race betting, etc.). Finally it may offer additional services (e.g., prostitution, drugs) which are not readily available at the legal venues.

There is very little academic research on the current extent and nature of illegal gambling in Canada. An exception to this is that Moodie (2002) documented that, between 1997 and 2002, in Ontario, there were 2069 people charged with illegal gambling. This was associated with the seizure of 2034 illegal slot machines, along with \$1.23 million in cash and \$6.01 million in property. In 2000, during a special investigation into book-making, Ontario investigators uncovered that \$4.6 million was spent in illegal sports betting over a 90 day period (Moodie, 2002). On the basis of evidence such as this, Moodie projected that there was at least \$380 million dollars in illegal gambling revenues in Ontario annually, with 92% of this going to support organized crime (Moodie, 2002).

Within Alberta, there is certainly a general sentiment that illegal gambling exists, and that organized crime is involved to some extent (Smith and Wynne, 1999). However, Smith and Wynne (1999) also point out that, while organized crime is almost certainly a supplier of illegal gambling, there is no evidence or belief that that they *control* the illegal gambling market. Rather, their activities are believed to be concentrated on more lucrative endeavors, such as drug dealing and prostitution.

Smith and Wynne (1999) also assert that illegal gambling is currently poorly monitored and enforced. This is partly due to the fact that there is an increased social acceptance of gambling behavior, and illegal gambling is seen as a victimless crime that has minimal repercussions for both society and the individuals engaged in it. Rather than allocating valuable resources to proactively thwart illegal gambling, police resources are directed to violent crimes and other high priority areas. In general, the authors suggest, policing agencies have implemented more of a reactionary approach to enforcing illegal gambling criminal code violations; law enforcement usually only conducts gambling investigations when a complaint is made.

In summary, although there is a strong assumption that legal gambling should decrease illegal gambling, there has been very little empirical investigation of this issue. The small amount of research that does exist suggests that it is naïve to assume that legalized gambling will totally eradicate illegal gambling (Wildman, 1997), and in some circumstances it may even stimulate participation in illegal gambling (Hybel, 1979).

Increased Rates of Criminogenic Problem Gambling?

Increased legal gambling availability could impact the amount of crime in a community by potentially increasing the number of criminogenic problem gamblers (Topoleski, 2003). Criminogenic problem gambling is defined as problem gambling that results in the gambler committing a criminal offense to support gambling habits.

Crime occurs in a percentage of problem gamblers.

Various terms have been used to describe disordered gambling, including 'compulsive gambling', 'addictive gambling', 'problem gambling', and 'pathological gambling'. The term used in the present document is 'problem gambling'. The definition of problem gambling put forward by Neal, Delfabbro, and O'Neil (2005) captures the essential elements of this phenomenon common to almost all definitions: *"Problem Gambling is characterized by difficulties in limiting money and/or time spent on gambling which leads to adverse consequences for the gambler, others, or for the community."* Essentially, a problem gambler is someone with a pattern of excessive gambling; impaired control over their gambling behaviour; significant negative consequences deriving from this impaired control; and persistence despite these negative consequences. Problem gambling is assumed to have varying degrees of severity, ranging from mild, moderate to severe. The term 'pathological gambling' is synonymous with the most severe forms of problem gambling.

Problem gambling is associated with a range of negative consequences for the individual, his/her family, and for society in general. One of these consequences

is gambling-related crime for some problem gamblers. Rosenthal and Lesieur (1996) assert that criminogenic problem gambling typically occurs in the late stages of gambling addiction. After exhausting legal avenues of obtaining money to gamble with (e.g., wages and saving), considerable gambling losses, and increased domestic and work pressures, the gambler becomes anxious and depressed, thereby compromising their judgment. In this phase of gambling addiction, individuals are preoccupied with obtaining money to gamble, and some of these individuals will resort to criminal offending in order to continue gambling.

It is certainly true that problem gamblers in treatment report frequent involvement in criminal activities. Several studies across European and North American countries have reported that 21% to 85% of problem gamblers from Gamblers Anonymous, counseling services, and inpatient treatment facilities have reported committing a criminal offense to maintain their gambling addiction (Blaszczynski and Silove, 1996). In a subsequent study of problem gamblers, Blaszczynski, Steel, and McConaghy (1997), found that 58% of the sample committed a gambling related offence and 21% committed a non-gambling related offense. More recently, Meyer and Fabian (2005) found that 55% of a sample of Gamblers Anonymous (GA) members reported committed crime to obtain money to gamble.

Most crimes committed by problem gamblers appear to be non-violent income generating property crimes, such as embezzlement, cheque and credit card fraud, forgery, larceny, and tax evasion (Blaszczynski and Silove, 1996). A small subset commits more serious offenses that result in custodial sentences (as

reviewed by Blaszczyński and Silove, 1996). In a review of police records, Smith, Wynne, and Hartnagel (2001) corroborated that the most common offenses that could be attributed to criminogenic problem gambling were theft, fraud, and family disputes. The authors also caution that problems inherent with self-report data make estimating the magnitude of criminogenic problem gambling difficult.

The evidence shows that a significant portion of problem gamblers commit crime to support gambling addiction. However, there are some causality issues with asserting that the crime committed by problem gamblers is caused by a gambling addiction. Many gamblers who commit offenses have prior convictions (Meyer and Stadler 1999); and forensic populations have a significantly higher rate of problem gambling than the general population. In a review of the relationship between problem gambling and forensic populations it was found that approximately 30% of offenders, in 27 different countries, met the criteria for problem gambling (Williams, Royston, and Hagen 2005), compared to general population studies, which estimate the past year prevalence of problem gambling to range from 0.5% to 7.6% of the adult population (Williams, Volberg, and Stevens, 2012).

Even though the literature demonstrates that forensic populations have higher rates of problem gambling, and problem gamblers have higher rates of criminal offending, the nature and extent of this relationship remains unclear. One possibility is that the late phases of gambling addiction results in criminogenic problem gambling. Another possibility is that both criminal offending and problem gambling have common determinants. Cunningham-Williams et al. (1998) found a strong relationship between antisocial personality disorder (ASPD) and problem

gambling, with a 6.1 times greater likelihood of an ASPD diagnosis in problem gamblers than in the general population. Furthermore, personality traits such as impulsivity, sensation-seeking, and low self-control have been independently correlated with antisocial and gambling behaviour (Blaszczynski, Steel, and McConaghy, 1997; Blaszczynski, Wilson, and McConaghy, 1986; Langewisch and Frisch, 1998; McDaniel and Zuckerman, 2003; Mishra, Lalumière, Morgan, and Williams, 2011; Skitch and Hodgins 2004; reviewed in Toneatto and Nguyen, 2007).

There is also good evidence to suggest that a common genetic and environmental vulnerability is responsible for the co-occurrence of crime and problem gambling. In a twin-model fitting study, Slutske et al. (2001) examined the extent to which the associations between ASPD and problem gambling were genetic or environmental. They were able to determine that 66% of the overlap between ASPD and problem gambling were attributed to genetic factors, suggesting at least one common genetic locus increases susceptibility to both ASPD and problem gambling. The authors contend that variants of the dopamine D2 and D4 receptors may account for the shared genetic predisposition of APSD and problem gambling. D2 and D4 receptors have been implicated as having a causal role in impulsivity disorders and addictions, including problem gambling (reviewed in Slutske et al., 2001). Furthermore, etiological models of antisociality and problem gambling identify common environmental risk factors of abusive/neglectful upbringing, parental gambling/antisociality, peer group gambling/delinquency, low income, high stress, low support, and opportunity (as reviewed by Williams, West, and Simpson, 2008; Moffitt, 1993).

In summary, the above evidence indicates that problem gamblers in treatment commit high rates of gambling-related crime and that forensic populations have high rates of problem gambling. Both of these things lend credence to the possibility that the increased availability of legal gambling may increase the prevalence of gambling-related crime. However, a very important limitation of the above studies is that they are conducted on clinical and forensic populations. Problem gamblers in treatment constitute a small portion of all problem gamblers (Williams, Belanger, and Arthur, 2011) and incarcerated individuals represent a small portion of people who commit crime. It is uncertain whether this strong association between problem gambling and criminality still exist in the general population of problem gamblers or in the general population of criminal offenders.

Increased gambling availability leads to increased problem gambling.

Even if there is an association between problem gambling and crime, this says nothing about whether increased legal availability of gambling results in increased rates of problem gambling (and therefore, criminogenic problem gambling).

In general, evidence indicates that greater availability of a product is typically related to greater use of the product, especially among those with dependency-forming potential. Thus, alcohol availability is positively associated with higher levels of consumption, which is correlated with higher levels of alcohol-related problems (Babor, Caetano, Caswell, et al., 2010; Cook, 2007; Cook and Moore, 2002; Gruenewald, Ponicki, and Holder, 1993; Rush, Gliksman and Brook, 1986). A similar relationship exists with illegal drugs (Babor, Caulkins, Edwards, et

al., 2010).

Evidence indicates that gambling availability has a similar positive, but complex relationship to problem gambling prevalence. Prior research has documented small but significant within-country associations between the availability of gambling and the prevalence of problem gambling (Lester, 1994; National Gambling Impact Study Commission [NGISC], 1999; Pearce, Mason, Hiscock, and Day, 2008; Productivity Commission, 1999; Shaffer, LaBrie, and LaPlante, 2004; Welte, Barnes, Tidwell, and Hoffman, 2009; Welte, Wieczorek, Barnes, Tidwell, and Hoffman, 2004; Williams, Belanger, and Arthur, 2011).

Furthermore, problem gambling prevalence rates started increasing in North American and Australia beginning in the late 1980s to early 1990s, coincident with the most rapid introduction and expansion of EGM and casino gambling in these countries (Williams, Volberg, and Stevens, 2012)⁵. In Alberta, the peak past year rates of problem gambling are estimated to have occurred in 1993 to 1996, which was coincident with the rapid introduction of VLTs and the doubling of the number of casinos from 7 to 14 (Williams, Belanger, Arthur, 2011).

However, it is also true that past year problem gambling prevalence rates in most countries peaked in the late 1990s/early 2000s, and there has been a general worldwide downward trend in rates since that time (Williams, Volberg, and Stevens, 2012). Considering that gambling availability has continued to increase in most jurisdictions over the past 30 years, this latter finding provides evidence that

⁵ This period was also coincident with the greatest increase in per capita gambling expenditure, and the introduction of specialized treatment services for problem gambling (In Canada, the first specialized treatment programs for problem gambling were developed in Alberta and New Brunswick in 1993).

populations tend to adapt over time (Shaffer, LaBrie, and LaPlante, 2004; LaPlante and Shaffer, 2007; Storer, Abbott, and Stubbs, 2009). There are several mechanisms likely responsible for this adaptation. They include: a) increased population awareness of the potential harms of gambling; b) decreased overall population participation in gambling after the novelty has worn off;⁶ c) people being removed from the population pool of problem gamblers due to severe adverse consequences deriving from their gambling (e.g., bankruptcy, suicide); d) increased industry and/or government efforts to provide gambling more safely, to enact programs to prevent problem gambling, and to provide treatment resources; and e) increasing age of the population (Williams, Volberg, and Stevens, 2012).

In summary, the evidence indicates that a) criminogenic problem gambling occurs in a percentage of problem gamblers and, b) that the increased availability of legal gambling does produce at least a temporary increase in the number of problem gamblers. Thus, this provides support to the contention that the introduction of legal gambling leads to increased rates of gambling-related crime.

Impacts on Crime through the Provision of Gambling Venues (that are potentially conducive to crime).

New gambling venues could *increase* crime rates by disproportionately attracting people with criminal tendencies and/or by providing increased and/or novel opportunities for criminal activity to occur. Theoretically, casinos create a

⁶ There is evidence that the average level of gambling activity in a jurisdiction roughly predicts the jurisdiction's level of excessive activity or problem gambling (e.g., Chipman, Govini, and Roerecke, 2006; Grun and McKeigue, 2000; Hansen and Rossow, 2008, 2012; Lund, 2008). This is known as the 'single distribution theory' (Rose, 1985; Rose and Day, 1990), which has been shown to have applicability in predicting rates of alcoholism.

facilitative environment for loan-sharking, passing counterfeit money, money laundering, theft, and cheating-at-play (Curran and Scarpitti, 1991). Furthermore, Sherman, Gartin, and Buerger (1989) noted that crime is not randomly distributed within a community, but rather there are some areas or 'hot spots' that are more likely to be disproportionately affected, with these 'hotspots' characterized by high rates of alcohol consumption (such as potentially occurs in casinos). Indeed, as noted by Barthe and Stitt (2007) alcohol in casinos lower the inhibitions of potential offenders and the large number of tourists make ideal victims because of readily available cash and a lower guard due to being in a relaxed emotional state. This idea is also consistent with the routine activities theory of crime, which posits that crime increases when there are motivated offenders, suitable targets, and a lack of capable guardians (Cohen and Felson, 1979).

Not surprisingly, most of the empirical data investigating the relationship between casinos and crime has been conducted in the United States. In 1931 the State of Nevada legalized commercial casinos and for nearly 50 years Las Vegas had the monopoly on casino style gambling. It was not until 1976 that New Jersey legalized commercial casinos in Atlantic City. The massive economic benefits that casinos had brought to Atlantic City caused other states to start thinking of the possibility that legalized casinos could infuse much needed economic wealth to their state. However, opponents raised concerns of the increased crime that would come along with casinos. New Jersey provided the perfect opportunity to empirically investigate this question by doing before-after comparisons. One of the first investigators to take advantage of these circumstances was Albanese (1985).

Albanese (1985) investigated the impact of casino openings in Atlantic City on index crimes (murder, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft) for the years 1978-1982, while controlling for changes in police manpower, daily population at risk (tourist population + resident population), and crime in the rest of the state. Albanese found that even though raw incidents of crime significantly increased with casino openings over the five-year time span ($r = .92$), that when controlling for the increased population, the correlation became negative ($r = -.34$). Albanese examined burglary independent of the other index offenses because it is the only offence that is a crime against property rather than a crime against an individual and found the same pattern (i.e., $r = -.05$ when not controlling for population increase and $r = -.92$ when controlling for population increase). Albanese's methodology is somewhat simplistic as he fails to take into account the years preceding casino openings for a true time series analysis. This is not due to oversight on his part, but rather a lack of data. Nonetheless, his results are illuminating, and also important for identifying that it is essential to control for the population increases that occur when a tourist destination is created as well as other potentially confounding variables.

Since Albanese's 1982 study there has been little reconciliation as to whether or not casinos facilitate crime. Results from all subsequent studies tend to hinge on whether or not the population at risk are considered in analysis. Crime rates invariably increase with the introduction of a casino when the population at risk is not considered and usually decrease when the population at risk is considered (e.g.,

Albenese, 1982; Buck, Hakim, and Spiegel, 1991; Curran and Scarpitti, 1991; Friedman, Hakim, and Weinblatt, 1989; Hakim and Buck, 1989).

Excluding the population at risk.

Friedman, Hakim, and Weinblatt (1989) examined the impact of casinos on crime rates as a function of accessibility to Atlantic City. They examined 64 surrounding communities for the years 1974 to 1984 and controlled for population size of the community, unemployment rate, real estate values, and population density, but failed to control for the population at risk. Friedman et al. (1989) demonstrate that crime is higher in post casino years than in pre-casino years, in both easily accessible and non-accessible communities to Atlantic City. The highest crime increases in post casino years for communities that can easily access Atlantic City are violent crimes, burglaries, and motor vehicle theft. The authors postulate that the higher crime rate may be attributed to Atlantic City tourists or to Atlantic City resident criminals operating outside of their city.

Two follow up studies to Friedman, Hakim, and Weinblatt (1989) yielded similar results. Hakim and Buck (1989) and Buck, Hakim, and Spiegel (1991) used the same panel data and control variables as Friedman et al. (1989) to assess the relationship between crime, casinos and property values. While all three of these studies demonstrate an increase in crime, they fail to adequately address Albanese's original concerns about interpreting crime statistics without considering the population at risk, and other variables that are associated with crime.

Casino impacts on crime may have a different pattern for smaller cities compared to a large metropolitan city like Atlantic City. Giacomassi and Stitt (1993)

analyzed monthly offense reports from the Biloxi, Mississippi area for one year prior to the first riverboat casino opening and one year after the casino opening. Biloxi has a population of less than 50,000 people. They found that no trends or significant differences existed between the two time periods for violent crime; however, incidents of robbery and aggravated assault increased while incidents of homicide and rape decreased. There was a significant increase for property crime after casino openings, specifically larceny, theft and motor vehicle theft. Burglary also increased, but was not statistically significant.

Giacopassi and Stitt (1993) admit that these changes in the crime patterns of Biloxi could be due to more of a police presence or a failure to take into account the population at risk. They postulated that their results would be similar to that of Albanese (1985) had they controlled for population increases and changes in police presence. In a follow-up study that did control for the population at risk, Chang (1996) concluded that casinos had little ongoing impact on crime rates, with a marked decrease in crime the first year of casino operation that dissipated by the second year of casino operation.

Grinols and Mustard (2006) conducted one of the most extensive studies investigating the relationship between casinos and crime. They examined data from every county in the U.S. from 1977 to 1996 and controlled for population density per square mile, total county population, population distributions of race, age, sex, income, unemployment, income maintenance transfers, and retirement. They also controlled for the overall trend of decreasing crime rates in 1990s by comparing the rate of decrease between casino and non-casino counties for magnitude of crime

drop. However, they failed to control for the total population at risk, and like the other studies, ultimately found an *increase* in crime rates.

Including the population at risk.

In response to the early studies on the impact of casinos on crime, Miller and Schwartz's (1998) reviewed the research examining the impact of casinos on crime and were highly critical of studies that did not include the visiting population. Furthermore, they argued that an increased population will usually increase the raw numbers of crimes; this is true for any attraction that draws tourists. In other words, the introduction of an amusement park could have the same local impact on crime as a casino.

Curran and Scarpitti (1991) compared crime rates of Atlantic City to those for the state of New Jersey for 10 pre-casino years (1968-1977) and 12 post casino years (1978-1989). Crime rates rose 108.6% statewide, compared to 55% in Atlantic City during the pre-casino years, and while the crime rate in post casino years stabilized for the state of New Jersey (only rising 1%), Atlantic City had a 201.7% increase. The raw data suggest that there is co-variation between casino openings and the increased rate of crime in Atlantic City, but when the population at risk was controlled for, Curran and Scarpitti (1991) found that Atlantic City had an overall downward trend in terms of the proportion of New Jersey's total crime. Proportional crime rates for murder, manslaughter, rape, aggravated assault, and motor vehicle theft remained constant for both pre and post casino years (i.e., casino openings had no effects on the trends of these particular crimes). Atlantic City's proportional crime rates for burglary, robbery, and larceny, however, declined in

pre-casino years, but this downward trend was halted and stabilized for robbery and burglary, and reversed for larceny, which increased in post-casino years (Curran and Scarpitti, 1991).

Including the population at risk in investigations of the impact of casinos on crime assumes that the visiting population has the same probability as the resident population of being either a victim or perpetrator of a crime. It is, therefore, important to examine where the crime is being committed and whom is being impacted by the crime. Curran and Scarpitti (1991) distinguished casino-based crime (crime that occurs on the property of casinos) from community-based crime. They concluded that 92.3% of all casino-based crime was larceny-thefts, and the majority of violent crimes occurred in the community (Curran and Scarpitti, 1991). Based on these results it appears that Atlantic City's increase in crime rates are caused by casinos, but residents are at no greater risk of being the victim of a crime. Rather, the victims of this additional crime are casino patrons. Furthermore, it is primarily economically motivated crimes that increase (vast majority being larceny-theft) with this crime being manifest primarily in and around casinos (Curran and Scarpitti).

Even though Buck, Hakim, and Spiegel (1991) found that their overall results conflicted with Curran and Scarpitti's (1991); Buck, Hakim, and Spiegel concede that there may be some crime that is generated by the presence of casinos and other crime that is unaffected. Crime generated by casinos tends to be non-violent property crime which remains in the casino, meaning it is casino patrons rather than community residents that are at greater risk of being a victim of a crime.

Further to this point, Barthe and Stitt (2007) examined community-based versus casino-based zones in Reno, Nevada, to test the 'hot spot' as a function of routine activity theory. They found that the casino zone (the geographic area adjacent to casinos) had the highest rate of crime, however, once the population at risk was factored in, the casino zones yielded the lowest crime rate, Barthe and Stitt (2009a,b) expanded their 2007 study by comparing casino 'hot spots' with other areas of the city that were also 'hot spots'. They examined police callouts to specific locations. They found no significant differences between casino and community-based 'hot spots', both in type of calls and in timing of calls. The only difference was that casino-based calls had higher rates of callouts for drunkenness and larcenies. Like Miller and Schwartz (1998), Barthe and Stitt argue, that despite some authors asserting that tourism derived from casinos is different from other types of tourism (e.g., Chang, 1996; Ochrym, 1990), they have found no evidence of this.

Like Giacomassi and Stitt (1993) and Grinols and Mustard (1996), other authors have postulated that casino impacts on crime may have a different pattern for smaller cities compared to a large metropolitan city like Atlantic City. Stokowski (1996) examined the relationship between gambling and crime in three Colorado mining towns Black Hawk, Central City, and Cripple Creek for the years 1989 to 1994. Stokowski compared pre and post casino crime rates without controlling for other factors that influence crime. However, she does attempt to account for the population at risk by using pre and post casino traffic counts, which increased three fold after casino openings. She reports that arrests increased by 306% from 1991 (pre-casino) to 1993 (post casino) years. The largest increase was in driving under

the influence, followed by drug offenses, assaults, and disorderly conduct. Minimal population increases and substantial traffic increases led Stokowski to conclude that the increases in crime were due to casino developments. Furthermore, she states that, although raw numbers in crimes reported have gone up, the chance of a resident being victimized has gone down because the tourist population has increased faster than the crime rate.

Even though Stokowski did not control for other factors that may have affected crime, traffic, and population changes, Walker (2010) conceded that there may not have been the need to. The three small mining towns in Stokowski's study were stagnant prior to the introduction of casinos, and complicating variables may be non-existent. Like Curran and Scarpitti (1991), Stokowski distinguished casino-based from community-based crime. She points out that casino-based crime is much more likely to be detected than community-based crime; especially considering the increased private security and numerous video cameras monitoring activity within casinos.

In an attempt to get to the bottom of whether or not the population at risk should be included in analysis of casinos and crime, Giacomassi, Stitt, and Nichols (2001) analyzed crime and tourist data from five U.S. cities (Biloxi, St. Louis, St. Joseph, Alton, Peoria/ East, and Sioux City) for four years prior to and four years after casinos openings. They calculated per capita crime rates using both a base population and the population at risk. They found that in most communities using the population at risk rather than the base population crime rate made little difference for serious violent offences and further argue that it is more likely that

casinos had a greater impact on non-index or less serious offenses.

Giacopassi, Stitt, and Nichols (2001) make one final comparison between Biloxi and the remaining four communities. Biloxi differs from St. Louis, St. Joseph, Alton, Peoria/East, and Sioux City in so far as the nine permanently situated barge casinos are a major tourist draw for Biloxi, whereas in the remaining five communities, the casinos primarily draw their clientele from the resident population. The authors conclude that including the population at risk would be appropriate for communities where casinos draw large numbers of tourists, but not for communities where casinos are not a tourist attraction.

Stitt, Nichols, and Giacopassi (2003) yoked casino communities with non-casino communities on 15 demographic variables. Their results were mixed, with some casino communities showing a decrease in crime, compared to control communities, and some showing an increase in crime, compared to control communities. The authors include the population at risk for casino communities, but fail to account for tourism in control communities. This study also failed to control for other factors that affect crime such as employment rates. Stitt et al. (2003) also mention that the only community that they examined in their study that had multiple casinos was Biloxi, with nine tourist destination casinos. Biloxi had the highest increase in crime rates which alludes to the point that Giacopassi, Stitt and Nichols (2001) made in an earlier study; casinos may affect crime in communities differently based on the number of casinos and the extent that casinos draw tourists.

Reece (2010) examined casinos and crime in Indiana, expanding on the

control variables used by Grinols and Mustard (2006). Thus, Reece is the first author to effectively control for casino activity, tourism, and changes in law enforcement. As such, he was hard pressed to find any evidence that casinos cause crime; and, his most important finding was that increased casino activity, measured by turn style counts, was associated with reduced rates of larceny, motor vehicle theft, aggravated assault, and robbery.

Literature Review Summary

There are three primary ways that increased legalized gambling could affect crime. One, through impacting rates of illegal gambling. Providing legal gambling should theoretically decrease rates of illegal gambling. However, the relationship between legalizing gambling and rates of illegal gambling may not be so straightforward. Illegal venues could provide services that legal outlets do not. There is also the possibility that the legalization of gambling could stimulate overall participation in gambling, including illegal gambling (Hybel, 1979). Despite much speculation as to how legalized gambling has impacted illegal gambling rates, there has been very little Canadian research on this issue. There is certainly a general sentiment that illegal gambling continues to exist, but the true extent that illegal gambling is still present is largely unknown (Smith and Wynne, 1999).

Two, increased legal gambling could potentially lead to increased criminogenic problem gambling by increasing the percentage of problem gamblers in the population. In general, the evidence indicates that increased gambling availability does temporarily increase the prevalence of problem gambling. Furthermore, it is clear that a percentage of problem gamblers commit gambling-

related crime. However, what is less clear is the actual portion of problem gamblers in the general population that commit gambling-related crime, as well as the extent to which these problem gamblers would have committed these crimes even if they did not have a gambling problem.

Three, new gambling venues could *increase* crime rates by disproportionately attracting people with criminal tendencies and/or by providing increased and/or novel opportunities for criminal activity to occur. Analyzing the impact that casinos have on crime rates is a difficult task that requires controlling for a large number of potentially confounding variables. The most important of these variables appears to be the increased size of the local population that a new gambling venue attracts. When this population is not included in analysis the crime rates invariably increase (e.g., Grinols and Mustard, 2006), when the population at risk is included in the analysis crime rates usually decrease (e.g., Curran and Scarpitti, 1991). Also, when casino-based crime (crime that occurs on the property of casinos) is distinguished from community-based crime, local residents appear to be at no greater risk of being the victim of a crime (i.e., the victims of this additional crime are largely casino patrons). It is also clear that violent crime does not seem to be effected by casino openings. Rather, economically motivated crimes seem to be affected the most with the vast majority of them being larceny-theft and occurring in and around casinos.

Chapter 3: Methodology

A multi-method triangulating research approach was used to investigate the relationship between legal gambling availability and crime in Alberta.

1. Population surveys were used to determine the over-all prevalence of problem gambling as well as the prevalence of gambling-related crime among problem gamblers (“criminogenic problem gambling”).
2. Data obtained from police records was used to determine what types of crime are related to gambling and what portion of crime is gambling-related.
3. Data provided by the Alberta Gaming and Liquor Commission were used to analyze illegal gambling and illegal activity in licensed gambling facilities.
4. Statistics Canada Uniform Crime data were used to determine rates of illegal gambling in Alberta over time.

Ethics approval for this project was granted by the University of Lethbridge Human Subject Research Committee.

Population Surveys

Population surveys in 2008 and 2009 were utilized primarily to determine the current prevalence rates of problem gambling in the Alberta population as well as changes in problem gambling prevalence in communities that recently received casinos. The utility to the present investigation is that the population surveys can also be used to determine the prevalence of criminogenic problem gambling among the identified problem gamblers. This prevalence rate can then be projected back to the Alberta population to estimate the actual number of Albertans who commit gambling-related crimes.

While tabulating the aggregate number of individuals seeking help for gambling problems is another potential method for estimating population prevalence rates of problem gambling, this approach is problematic because only a very small number of problem gamblers present for treatment, utilize telephone-help lines, or register for self-exclusion programs (Williams, Belanger, and Arthur, 2011). In a recent study examining treatment seeking among problem gamblers in Ontario, Suurvali, Hodgins, Toneatto, and Cunningham (2008) found that only 3% to 6% of problem gamblers surveyed have ever sought help of any form. Self-help options were the most frequently accessed. Similar results have been found in two US national surveys, the Gambling Impact and Behavior Study (GIBS) done in 1998—1999 and the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) conducted in 2001—2002 (Slutske, 2006). Furthermore, there are often fluctuations in treatment availability, which artificially affects treatment numbers.

The number of problem gamblers in treatment programs who have committed a crime to support gambling activities is unusually high, and varies significantly between treatment programs (Blaszczynski and Silove, 1996); thus obtaining accurate criminogenic problem gambling rates based on a sample of problem gamblers in treatment lacks scientific reliability. This could be attributed to the self-selected nature of the sample. Most individuals voluntarily attend treatment; furthermore, committing a crime to support gambling habits could be indicative of the severity of the gambling problem or even an escalation factor that catalyzed the individual's decision to seek treatment. Therefore, representative

population surveys are the best way to obtain accurate criminogenic problem gambling prevalence rates.

Methodology.

Population surveys were conducted in 2008 and 2009. Within each year, three different samples were obtained: a General Population sample, a Targeted sample, and an Online sample. All surveys were conducted by Consumer Contact, a survey company with corporate offices in Toronto Ontario. The 2008 data collection occurred between June 11 and August 2008 and the 2009 data collection was completed between June 10 and August 31, 2009. A detailed description of the samples and methodology are presented in Appendix A.

The General Population sample was the sample used to estimate the general prevalence of gambling and problem gambling within the province. The General Population sample was obtained by random digit dialing (RDD) Alberta telephone numbers. This included unlisted landline numbers, but excluded cell phone numbers⁷.

The Targeted sample was employed to investigate the impact of having a new casino. Thus, people were surveyed in four geographic areas of Alberta that did not have casinos prior to their introduction in late 2007/early 2008 (Cold Lake area; Whitecourt area; Camrose area; Morley area), and five geographic areas that had had casinos for many years (Fort McMurray area; Grande Prairie area; Red Deer area; Medicine Hat area; Lethbridge area). Geographic range of this sample was 75 km from the casino, with the exception of Morley and Camrose, which had a

⁷ Cell phone numbers were excluded to avoid the potential double sampling individuals from the same household.

designated range of 50 km (so as not to include the cities of Calgary and Edmonton respectively). The Targeted sample was obtained by random digit dialing of listed telephone numbers within each geographic area.

To ensure random sampling and valid self-report for the General Population and Targeted telephone surveys, several procedures were implemented. Dr. Williams, the principal investigator for the SEIGA project, conducted training sessions with the survey management team and all their interviewers prior to each survey year. The household interviewee was randomly selected by requesting the interview be conducted with the adult (18+) having the next birthday. Maximal effort was made to complete an interview with the randomly designated person (i.e., 16 attempts to contact the person, with a maximum of two call attempts per evening; majority of the phoning occurring in the evening and on weekends). Supervisors conducted periodic visual and audio monitoring for quality control, and the interview was kept short to maximize response rates. The average interview length for completed telephone interviews was 14.23 minutes in 2008 and 14.55 minutes in 2009.

The Online sample was collected to investigate whether prevalence rates obtained with this method would approximate the rates obtained with telephone surveys. While telephone surveys provide advantages such as high control over data collection and respondent selection, there are also problems with RDD telephone surveys (Lavrakas, 2010). Response rates are falling, and there is reasonable evidence to suggest refusals are not equally distributed among the population, thereby decreasing validity of RDD surveys (de Leeuw and de Heer,

2002). Another major problem is that there is an increasing number of people who no longer have landlines, opting for cell phones only (cell phone numbers are traditionally not included in RDD telephone surveys). Statistics Canada (2007) data shows that cell phone only users are disproportionately represented by renters, young people, and lower socioeconomic individuals resulting in RDD surveys oversampling older people, home owners, and higher socioeconomic individuals (Lavrakas, 2010).

The Online sample was recruited via email solicitation to the Alberta online panelists who were members of Consumer Contact's Canadian online panel (ResearchByNet Online Panel). Because of insufficient numbers, the ResearchByNet Online Panel was supplemented with Alberta online panelists from other survey companies (21% supplementation).

Samples.

Table 3.1 summarizes the sample sizes and response rates. A detailed breakdown of how the response rates were calculated can be found in Appendix A.

Table 3.1. Samples for the Population Surveys

| Sample | Year | <i>n</i> | Response Rate | Weighted |
|----------------------------------|-------------|-----------------|----------------------|-----------------|
| RDD General Population | 2008 | 3001 | 25.5% | Yes |
| | 2009 | 1004 | 33.1% | Yes |
| RDD Targeted | 2008 | 4512 | 23.4% | No |
| | 2009 | 3624 | 24.1% | No |
| Online General Population | 2008 | 2019 | Not applicable | Yes |
| | 2009 | 1006 | Not applicable | Yes |

To ensure sample-population consistency the data from the General Population and Online samples were weighted by household size as well as age and gender. Weighting by household size corrected for over sampling of people from small households and under sampling of people from large households. The age by gender weighting corrected for the under sampling of males and younger adults and reflected the age by gender groupings of Alberta adults in the 2006 Canadian census.

Questionnaires.

All three samples received the identical questionnaire (see Appendix A). The Questionnaire in both years is broken down into three sections:

1. *Demographics* which includes marital status, education, employment, income, debt, immigrant status, ethnicity, and residence.
2. *Comorbidities*, including substance use, other addictive behaviours, stress, mental health, and physical health.
3. *Gambling* which includes gambling attitudes, past year gambling behaviour, gambling motivation, gambling entertainment, and problem gambling measures.

Problem gambling was assessed using the Canadian Problem Gambling Index (CPGI) (Ferris and Wynne, 2001), as well as the Problem and Pathological Gambling Measure (PPGM) (Williams and Volberg, 2010). The PPGM is a relatively new measure of problem gambling that has superior technical characteristics compared to older instruments. In a large scale validation study (7,273 individuals from 105 countries) comparing the PPGM to other instruments (South Oaks Gambling Screen (SOGS), DSM-IV criteria for problem gambling, Canadian Problem Gambling Index),

the PPGM was found to have superior sensitivity, specificity, positive predictive power, and negative predictive power compared to the other instruments. Its overall diagnostic efficiency was 99.0% compared to 93.0% for the DSM-IV, 89.8% for the SOGS, and 86.3% for the CPGI (Williams and Volberg, 2010).

The PPGM has three sections. The “problems” section consists of seven questions and assesses whether or not gambling behaviour has had a significant negative impact on finances, work, school, health, mental health, and freedom. The “impulse control” section consists of four questions and assesses whether the person has experienced impaired control over their gambling. The last section, “other issues” consists of three questions and assesses psychological processes surrounding gambling behaviour. After scoring, the PPGM classifies individuals into one of five categories 1) pathological gambler 2) problem gambler 3) at risk gambler 4) recreational gambler 5) non-gambler (see Appendix B and C to view the PPGM and scoring details).

The CPGI and the PPGM were only administered if a person’s total monthly spending on gambling was more than \$10 a month in the 2008 survey, or if a person gambled at least once a month in the 2009 survey. This procedure eliminated 52.6% and 48.3% of the sample respectively.

Criminogenic problem gambling prevalence rates.

To obtain criminogenic problem gambling rates data were analyzed from a sub-set of survey questions:

1. Has your involvement in gambling caused you or someone close to you to write bad cheques, take money that didn't belong to you or commit other illegal acts to support your gambling in the past 12 months? (GP14a)
2. In the past 12 months has gambling ever caused an instance of domestic violence in your household? (GP11b)
3. In the past 12 months, how much money have you illegally obtained in order to gamble? (GP14b)
4. In the past 12 months has your gambling been a factor in your committing a crime for which you have been arrested? (GP14d)
5. Were you convicted for this crime? (GP14e)
6. Were you incarcerated for this crime? (GP14f)

Police Records

Statistics Canada data are useful in analyzing overall criminal trends and category specific crime rates. However, the main limitation of this data is that the *causes* of crime are not recorded within these statistics. The only potential way to ascertain a cause of a criminal offense is to examine the original police report where the responding officer has the option to record mitigating factors and details of the incident within the narrative of his/her report.

Most major cities in Alberta have municipal police services (i.e., Calgary, Edmonton, Lethbridge and Medicine Hat). The remainder of the province relies on the services of the Royal Canadian Mounted Police (RCMP). In August 2008, members of the SEIGA research team contacted all of the municipal police forces, and the RCMP in Alberta, requesting access to their databases for the purposes of

examining their case files so as to determine the number and type of incidents that were gambling related. The RCMP, Calgary police force,⁸ and Edmonton police force declined. However, two southern Alberta police forces agreed to participate in the research project: the Medicine Hat Police Service (MHPS) and the Lethbridge Regional Police Service (LRPS).

The MHPS assigned an officer to collect the relevant data on behalf of the research team. However, for the LRPS the present author was given direct access to the LRPS database from April 26 to April 30, 2010. In order to acquire access to the LRPS database, both myself and Dr. Williams had to sign a confidentiality agreement, (Appendix D). Due to changes in software and data management technology⁹ only case files for the years 2004 to 2009 for the MHPS and 2005 to 2009 for the LRPS were accessed.

To narrow down which case files to examine, an electronic key word search was conducted to identify cases that contained any of the following words: “gamble”, “gambling”, “VLT”, “lottery”, “casino”, “slot”, and “bingo”. Whenever one of these words was found the entire file was read to ascertain the type of incident and whether or not the incident was gambling-related. If an incident was deemed to be gambling-related, the offence type and date was recorded. LRPS Annual Reports

⁸ Calgary police force was willing to allow me access to their database; however, they were transitioning to a new data storage system and would not allow me access until they had completed the data restructuring, given the time constraints to the current project, I could not wait for Calgary to complete their data migration.

⁹ Older police data systems utilized a DOS based system and would only allow for very rudimentary data searches. Also, files stored in the older systems were often coupled with paper files where the details of a crime were documented; most of these files were inaccessible for viewing. In 2004 and 2005 MHPS and LRPS, respectively, switched to Windows based systems. The new systems store files digitally thus accommodating key word searches and access to case details.

categorize crime in terms of five general categories:¹⁰ 1) Crimes against Persons (e.g., murder, robbery, assault, domestic violence, etc.), 2) Crimes against Property (e.g., break and enter, theft, fraud, etc.), 3) Vice Crimes (gambling, liquor, drugs, prostitution, etc.), 4) Criminal Code Traffic Violations (impaired operation of motor vehicle, refusal to provide breath sample, hit and run, etc.), and 5) Other (incidents that are not criminal in nature, but still require police assistance (e.g., attempted suicide, child neglect/abandonment, breach of probation)).

To gauge the proportion of crime that can be attributed to gambling, this data was compared to the overall number of reported incidents for each city for each year. Overall offense rates for Medicine Hat were provided directly by the MHPS, and data for Lethbridge was taken from the annual reports posted on the LRPS website, <http://www.lethbridgepolice.ca/>.

Alberta Gaming and Liquor Commission Data

Part of AGLC's mandate is to license, regulate, and monitor gambling and liquor activities in Alberta in accordance with the *Gaming and Liquor Act*, Gaming and Liquor Regulation, and the *Criminal Code of Canada*. To help meet this part of their mandate the Regulatory Division of AGLC has an investigations arm which is primarily responsible for 1) enforcing terms and conditions of AGLC licensing agreements, 2) performing background checks on gambling owners, employees, volunteers, and suppliers, 3) investigate criminal occurrences related to licensed gambling, 4) coordinate with municipal law enforcement agencies to gather, analyze, and disseminate intelligence.

¹⁰ MHPS raw data was not categorized, rather categorization was done manually to be consistent with LRPS data.

Within the investigations branch of the Regulatory Division of AGLC is a multi-agency task force called the Gambling Investigations Team (GIT; formed in 2001). This task force is funded by AGLC and is responsible for investigating crimes that occur on licensed gaming premises (e.g., cheating at play, theft) as well as illegal gambling (unlicensed gaming houses, bookmaking, etc.). GIT investigators are RCMP and municipal police officers whose wages are paid by AGLC. There are two full-time RCMP officers, one in Calgary and one in Edmonton. There are four half-time officers, with one in Camrose, one in Lethbridge, one in Medicine Hat, and one in the Tsuu T'ina First Nation.

Gambling venues are required to report to GIT any illegal activity on their premises for investigation. A request for data was made to the Executive Director of the Regulatory Division of AGLC (Gill Hermanns). Mr. Hermanns indicated that this data was kept by the police and not the AGLC. As data had already been requested from the municipal police forces and the RCMP, I conducted an impromptu, unstructured interview with Mr. Hermanns to ascertain his perception on current rates of gambling-related crime and illegal gambling.

Even though the AGLC does not keep current data on illegal gambling or gambling-related crime, there is some historical data that is worth analyzing. Prior to the formation of the AGLC, the Gaming Control Branch in the Attorney General's office was responsible for the control and regulation of gambling. The Gaming Control Branch reported investigation statistics in their annual reports from 1991 to 1995. The data contained in the annual reports were listed as criminal charges laid by inspectors from the Gaming Control Branch and consisted of offense categories:

theft over \$1000, theft under \$1000, cheating at play, conspiracy to commit fraud, fraud under \$5000, fraud over \$5000, mischief, offering secret commissions, uttering a forged document, obstruction of justice, uttering slugs (VLTs), break enter and theft, counsel an offense, operating a lottery scheme contrary to licence terms and conditions, and other.

Statistics Canada Data

Provincial-wide crime rates are collected by Statistics Canada's Uniform Crime Reporting Survey. This information comes from the Canadian Centre for Justice Statistics which collects reports of crime-related incidents from police forces across Canada. Data incidents are reported per 100,000 people from 1962 to 2009.

In the original SEIGA analysis, correlations between crime-related incidents per year in Alberta¹¹, and various indices of gambling availability per year¹², were examined from 1962 to 2009 (Williams, Belanger, and Arthur, 2011). However, most of these correlations did not make any theoretical sense (i.e., increased gambling availability being associated with *decreased* theft and fraud). It would seem that most of these are likely spurious correlations that have simply capitalized on the general increase over time of gambling availability coincident with the general nation-wide increase in crime rates up to the early 1990s, that was followed by a general nation-wide decrease in crime up to the present time (the exception

¹¹ The crime categories used were: All Criminal Code Offences (except traffic), All Violent Offences, All Property Offences, All Theft Offences, All Fraud Offences, Counterfeit Money Offences, and All Illegal Gambling Offences.

¹² Number of pull ticket licences per 1000 adults; number of bingo events per 1000 adults; number of ticket lottery centres per 1000 adults; number of VLTs per 1000 adults; number of VLT locations per 1000 adults; number of permanent casinos and RECs per 1000 adults; number of slot machines per 1000 adults; number of total EGMs per 1000 adults; and per adult net gambling expenditure (in 2010 dollars).

being violent crime in Alberta which has not decreased). There is not enough year-to-year variability, in either gambling availability or crime rates, to fairly evaluate whether crime indices would move up and down coincident with up and down changes in gambling availability. Thus, there appears to be very little in the way of reliable findings from this analysis, and therefore the bulk of these findings are not included in the present study (but are contained in Williams, Belanger, and Arthur (2011) for the interested reader). The one exception concerns the relationship between increased availability of legal gambling and incidents of illegal gambling, which is reported in the present study.

Chapter 4: Results

Population Surveys

In order to obtain a large enough sample of problem gamblers, and especially, criminogenic problem gamblers, data from the General, Targeted, and Online samples were combined from both the 2008 and the 2009 population surveys. A total of 403 individuals were identified as problem or pathological gamblers on the PPGM, out of the total combined sample of 15,166. Table 4.1 summarizes the data for these individuals from the criminogenic problem gambling subset of questions.

Table 4.1 Criminogenic Problem Gambling Among 403 Problem Gamblers

| Question | Response Options | Number |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|---------------------|
| Has your involvement in gambling caused you or someone close to you to write bad cheques, take money that didn't belong to you or commit other illegal acts to support your gambling in the past 12 months? | Yes No | 29 374 |
| In the past 12 months has gambling ever caused an instance of domestic violence in your household? | Yes No | 17 386 |
| In the past 12 months, how much money have you illegally obtained in order to gamble? | > \$0 \$0 Refused Don't know | 25 375 2 1 |
| In the past 12 months has your gambling been a factor in your committing a crime for which you have been arrested? | Yes No | 5 398 |
| Were you convicted for this crime? | Yes No | 2 401 |
| Were you incarcerated for this crime? | Yes No | 1 402 |

Among the 403 problem gamblers 29/403 ($7.2\% \pm 2.5\%$ ¹³) indicated that their gambling had caused them to commit an illegal act, 17/403 ($4.2\% \pm 1.9\%$) indicated that gambling was the cause of an incident of domestic violence, 25/403 ($6.2\% \pm 2.4\%$) indicated they had obtained money illegally for their gambling, 5/403 ($1.2\% \pm 1.1\%$) indicated they had been arrested for committing a gambling-related crime, 2/403 (0.5%) indicated they were convicted for this crime, and 1/403 (0.2%) indicated they were incarcerated for this crime.

The 2008 population survey found the population prevalence rate of problem gambling using the PPGM to be 2.1%. In 2009, the rate was estimated to be 3.1% (Williams, Belanger, and Arthur, 2011). Taking the average of these two rates and projecting this to the adult (18+) population of Alberta in 2008/2009, results in an estimated 72,456 problem gamblers in Alberta in 2008/2009.

Applying the above calculated prevalence rates, to the estimate of 72,456 problem gamblers, indicates that annually there would be about 5,214 Albertans who commit gambling-motivated illegal acts, 4,494 who illegally obtain money to gamble, 3,043 cases of domestic violence due to gambling, 899 people who are arrested because of gambling-related offences, 360 who are convicted for this gambling-related offence, and 180 who are actually incarcerated for this gambling-related offence.

¹³ 95% confidence intervals

Police Records

Table 4.2 summarizes the results of the key word searches of police records for gambling-related terms, with the results for Lethbridge at the top, Medicine Hat in the middle, and the combined communities at the bottom.

These figures indicate a few things. First, the most common type of gambling-related incident is property related, accounting for 48.7% (184/378) of all identified cases. Second, the number of gambling-related incidents in recent years appears to be somewhat lower than earlier years. Third, the rate of overall gambling-related incidents is quite low, representing only 0.6% of all incident reports (378/64,280).

Table 4.2 Reported Criminal Offences as a Function of City and Year

| Lethbridge | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | TOTAL |
|-----------------------------------------|-------------|--------------|-------------------|--------------|--------------|--------------|---------------|
| Property Crimes (PC) | N/A | 5,448 | 5,195 | 6,077 | 5,730 | 5,708 | 28,158 |
| Gambling-Related PC | N/A | 0 | 32 | 20 | 24 | 15 | 91 |
| Crimes against Persons (CP) | N/A | 958 | 935 | 1,185 | 1,271 | 1,447 | 5,796 |
| Gambling-Related CP | N/A | 0 | 8 | 6 | 6 | 9 | 29 |
| Vice Crimes (VC) | N/A | 320 | 898 ¹⁴ | 754 | 884 | 941 | 3,797 |
| Gambling-Related VC | N/A | 1 | 6 | 12 | 11 | 8 | 38 |
| Impaired Motor Vehicle Operation (IMVO) | N/A | 471 | 239 | 258 | 314 | 309 | 1,591 |
| Gambling-Related IMVO | N/A | 0 | 6 | 11 | 1 | 5 | 23 |
| Other Gambling-Related Incidents | N/A | 0 | 9 | 17 | 10 | 10 | 46 |
| TOTAL INCIDENTS | N/A | 7,197 | 7,267 | 8,274 | 8,199 | 8,405 | 39,342 |
| TOTAL GAMBLING-RELATED INCIDENTS | N/A | 1 | 61 | 66 | 52 | 47 | 227 |

| Medicine Hat | 2004 | 2005 | 2006 | 2007 | 2008 | 2009¹⁵ | TOTAL |
|-----------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------------------|---------------|
| Property Crimes (PC) | 3,433 | 2,592 | 2,862 | 2,800 | 2,400 | 2,548 | 16,635 |
| Gambling-Related PC | 23 | 16 | 12 | 17 | 15 | 10 | 93 |
| Crimes against Persons (CP) | 532 | 531 | 598 | 638 | 663 | 773 | 3,735 |
| Gambling-Related CP | 3 | 0 | 3 | 4 | 3 | 4 | 17 |
| Vice Crimes (VC) | 419 | 483 | 431 | 594 | 626 | 557 | 3,110 |
| Gambling-Related VC | 4 | 5 | 5 | 7 | 5 | 1 | 27 |
| Impaired Motor Vehicle Operation (IMVO) | 183 | 173 | 187 | 272 | 294 | 349 | 1,458 |
| Gambling-Related IMVO | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| Other Gambling-Related Incidents | 1 | 3 | 3 | 2 | 2 | 1 | 12 |
| TOTAL INCIDENTS | 4,567 | 3,779 | 4,078 | 4,304 | 3,983 | 4,227 | 24,938 |
| TOTAL GAMBLING-RELATED INCIDENTS | 32 | 25 | 24 | 31 | 26 | 13 | 151 |
| Both Communities Combined | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | TOTAL |
| Property Crimes (PC) | 3,433 | 8,040 | 8,057 | 8,877 | 8,130 | 8,256 | 41,793 |

¹⁴ The significant change in rates under vice crimes between 2005 and 2006 is due to a change in LRPS records system. In 2005 public consumption and public intoxication is not captured in this figure.

¹⁵ 2009 data for Medicine Hat is missing data from Nov and Dec. To compensate for these missing months the author took the average occurrence per month from January 1st, 2009 to October 31st 2009 and applied this average to November and December 2009 to create a full year.

| | | | | | | | |
|------------------------------------------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Gambling-Related PC | 23 | 16 | 44 | 37 | 39 | 25 | 184 |
| Crimes against Persons (CP) | 532 | 1,489 | 1,533 | 1,823 | 1,934 | 2,220 | 9,531 |
| Gambling-Related CP | 3 | 0 | 11 | 10 | 9 | 13 | 46 |
| Vice Crimes (VC) | 419 | 803 | 1,329 | 1,348 | 1,510 | 1,498 | 6,907 |
| Gambling-Related VC | 4 | 6 | 11 | 19 | 16 | 9 | 65 |
| Impaired Motor Vehicle Operation (IMVO) | 183 | 644 | 426 | 530 | 608 | 658 | 3,049 |
| Gambling-Related IMVO | 1 | 1 | 7 | 12 | 2 | 6 | 29 |
| Other Gambling-Related Incidents | 1 | 3 | 12 | 19 | 12 | 11 | 58 |
| <i>TOTAL INCIDENTS</i> | (4,567) | 10,976 | 11,345 | 12,578 | 12,182 | 12,632 | 64,280 |
| <i>TOTAL GAMBLING-RELATED INCIDENTS</i> | (32) | 26 | 85 | 97 | 78 | 60 | 378 |

However, it must be pointed out that there is almost certainly a significant underestimation of the number and proportion of gambling-related incidents in these files. For gambling involvement to be recorded in a case file there are several steps that need to occur 1) actual gambling-related involvement has to be present, 2) the responding officer would have to be aware of the gambling-related involvement, and 3) the responding officer would have to feel that it was important to record the gambling-related involvement.

To help gauge the degree of which police under detect or record gambling-related incidents, a comparison was made between the number of incidents of gambling-related domestic violence and illegal acts in the police records for the years 2008 and 2009, compared to the prevalence of these incidents from the Lethbridge and Medicine Hat Targeted population surveys for 2008 and 2009. In the police records there are only 8 cases of gambling-related illegal acts and 8 cases of gambling-related domestic violence in both cities combined for these two years. By comparison, in the Targeted population surveys, there were 4/1805 people in the Lethbridge and Medicine Hat regions who indicated that gambling had resulted in the commission of illegal acts in 2008/2009 and 5/1805 people who reported an incident of gambling-related domestic violence. With a combined population of approximately 135,000 people between the 2 cities, this would project to 299 cases of gambling-related illegal acts per annum and 374 cases of gambling-related domestic violence per annum. It is true that only a portion of gambling-related crime is ever reported or detected. However, the size of the discrepancy between the Targeted population survey data and police record data would also suggest that

even when gambling-related crime is reported, that gambling as a contributing factor, is not routinely documented.

It is important to remember that the figures in Table 4.2 represent incidents that are directly caused by gambling as well as incidents that are *associated* with gambling in some way. Thus, further scrutiny of these events is needed to better understand their nature. Detailed analysis established that the large majority of these incidents represented offences that had been identified in the key word search because the offence *occurred in a gambling venue (i.e., casino) or in the immediate vicinity of a gambling venue*. This was true for 276 out of the 378 total incidents (73.0%). As speculated earlier, it is quite possible that gambling venues either attract people with greater criminal tendencies and/or provide more opportunities for criminal activity. However, the actual causal role of the gambling venue is difficult to establish in most of these situations.

In fact, there were only 62 cases among the entire data set where the report contained enough information such that the criminal offence could be unambiguously attributed to gambling-problems. Twenty-one of these cases (33.9%) involved Domestic Violence due to gambling. Eighteen cases (29.0%) involved Fraud. These fraud cases ranged from not paying a taxi driver, because of insufficient funds, to fraudulently obtaining \$83,000 from an employer to support gambling. (The average monetary amount involved in these cases was \$18,972). Seventeen cases (27.4%) involved Theft Under \$5000. Average amount stolen to support gambling in these cases was \$898 (median of \$180). Five cases (8.1%) involved Theft Over \$5000. Four out of five of these cases involved employees

stealing from their employers (average of \$20,750 stolen for all 5). Finally, there was one case of Break and Enter (1.6%).

There were also seven suicide attempts related to gambling. The majority of these individuals were young males. One was a college student who was despondent because he had spent all his student loan money on gambling. There were four cases of child neglect related to gambling, with the child (age 2.5 to 6) being left in the car while the parent gambled. Two of these involved mothers playing VLTs.

Canadian Criminal Code statistics do not identify whether assaults are domestic-related or not. However, there is a very rough way of inferentially estimating the percentage of domestic violence incidents that are gambling related. In the 2008/2009 Targeted population surveys of the Lethbridge area, 1/903 people indicated that gambling led to domestic violence. This projects to 75 cases on average per annum among the estimated 72,456 problem gamblers. Given that the average number of domestic violence incidents reported in Lethbridge police incident reports for 2008/2009 was 947, gambling-related domestic violence would have accounted for approximately 7.9% of all incidents.

Alberta Gaming and Liquor Commission Data

Even though the AGLC stores no current data, there is some historical data that is useful to examine. Prior to the formation of AGLC, the Gaming Control Branch in the Attorney General's office was responsible for the control and regulation of gambling. The Gaming Control Branch reported investigation statistics in their annual reports from 1991 to 1995, these statistics are reported in Table 4.3.

Essentially these data confirm the police incident report data in that theft and fraud

tend to be the most common types of offences, along with various forms of cheating.

Table 4.3 Criminal Charges Laid by Inspectors from the Gaming Control Branch

| Offence | 1991 | 1992 | 1993 | 1994/1995 (fiscal year) |
|-----------------------------------------------------------------------|-----------|-----------|-----------|-------------------------------|
| Theft Over \$1000 | 14 | 20 | 11 | 10 |
| Theft Under \$1000 | 8 | 4 | 4 | 5 |
| Cheating at Play | 3 | 6 | 7 | 9 |
| Conspiracy to Commit Fraud | | | 5 | 6 |
| Fraud Under \$5000 | | | 3 | 1 |
| Fraud Over \$5000 | | | 8 | 1 |
| Mischief | | | 1 | 7 |
| Offering Secret Commissions | | | 4 | |
| Uttering a Forged Document | | | 3 | |
| Obstruction of Justice | | | | 2 |
| Uttering Slugs (VLTs) | | | | 1 |
| Break, Enter, & Theft | | | 1 | |
| Counsel an Offense | | | 8 | |
| Operating Lottery Scheme Contrary to Licence Terms & Conditions | | | 12 | |
| Other | | 34 | | 1 |
| TOTAL | 28 | 64 | 67 | 43 |

**Source: Alberta Gaming Commission and Gaming Control Branch Annual Reports.*

In addition to some historical data the Executive Director of the Regulatory Division of AGLC Gill Hermanns, was able to provide his perspective on gambling-related crime. In a telephone interview he indicated he was confident that illegal gambling activity has decreased with the infusion of legal gambling, and attributed this decrease to the notion that people feel more secure going to a legal gambling venue when presented with the choice of both legal and illegal gambling, therefore decreasing the market for illegal gambling. Mr. Hermanns also pointed out that

while illegal gambling has decreased it has not been abolished, and made reference to a recent investigation where “gray machines were seized from the backroom of a restaurant”.

Statistics Canada Data

Figure 4.1 displays the incidents of illegal gambling per 100,000 Albertans over time, with this data derived from Statistics Canada Uniform Crime Statistics. One important and obvious trend in the data is the continuous decrease over time in the rate of illegal gambling. This makes sense considering that the increased availability of legal gambling should dampen the demand for illegal gambling opportunities. There is a particularly large decrease in illegal gambling coincident with the 1969 Criminal Code change legalizing ‘lottery schemes’. Another decrease appears to occur coincident with the 1985 Criminal Code change giving control over lottery schemes to the provinces and permitting them to offer electronic forms of gambling. However, it is important to note that some of these decreases actually preceded the 1969 and 1985 legislative changes (particularly the decrease from 1965 to 1968). This likely reflects the greater tolerance for illegal gambling and less diligent enforcement of the law that often tends to precede legislative changes.

There was a significant ($p < .05$) Pearson correlation between the rate of illegal gambling incidents each year and the number of Alberta ticket lottery centres per 1000 adults ($r = -.77$); number of casinos and racing entertainment centres¹⁶ per 1000 adults ($r = -.45$), number of slot machines per 1000 adults ($r = -.45$), and per adult net gambling expenditure (in inflation-adjusted dollars) ($r = -.47$).

¹⁶ Racetracks with slot machines.

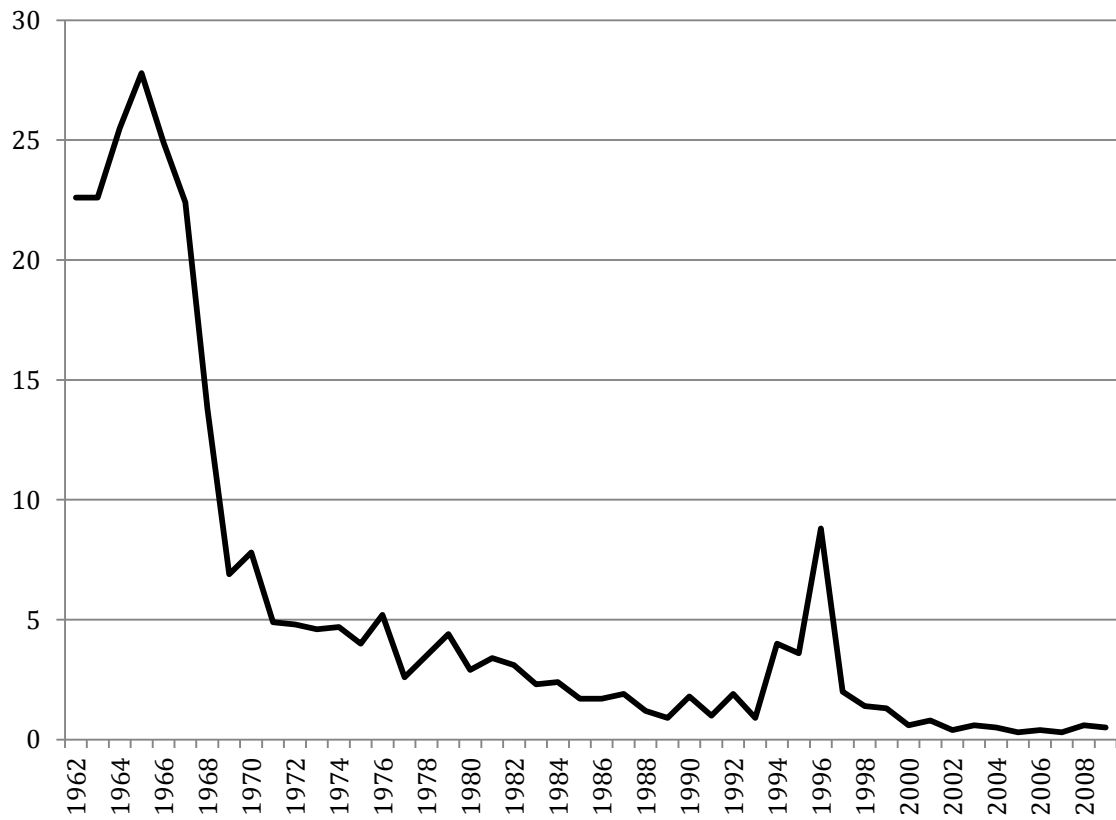


Figure 4.1 Incidents of Illegal Gambling per 100,000 Albertans as a Function of Year
*Source: Statistics Canada Uniform Crime Statistics

Chapter 5: Discussion and Conclusions

What Portion of Problem Gamblers Commit Crime to Support their Gambling Habit?

One of the important results of this study is that it provides a more accurate estimate of the portion of problem gamblers who commit gambling related crime, as compared to figures that have previously been obtained from treatment samples. The present result of 7.2% is considerably lower than had been previously estimated from treatment and forensic samples.

However, it is consistent with the estimates of the Australian Productivity Commission (1999).¹⁷ The Productivity Commission estimated that 3.3% of SOGS 5+ and 11.3% of SOGS 10+ Australian problem gamblers have committed a gambling-related illegal act. Furthering this comparison, 1.2% of SOGS 5+ and 3.7% of SOGS 10+ Australian problem gamblers admitted to obtaining money illegally to gamble with compared to 6.2% of Alberta problem gamblers; 0.2% of SOGS 5+ and 1.4% of SOGS 10+ Australian problem gamblers admitted to being charged with a gambling-related crime compared to 1.2% of Alberta problem gamblers who admitted to being arrested for a gambling-related offense. Another important aspect of the Productivity Commission results is that by differentiating between levels of problem gamblers, it is evident that as problem gambling severity increases, so does the likelihood of criminogenic problem gambling.

¹⁷ The Productivity Commission is the Australian Government's independent research and advisory body on a range of economic, social and environmental issues affecting the welfare of Australians. In 1999, The Productivity Commission released a large-scale report on the economic and social impacts of gambling in Australia.

While the results of the Productivity Commission are similar to that of the current study there are some important differences that should be noted. The Productivity Commission used the SOGS as a measure of problem gambling to identify problem gamblers, whereas, the current study used the PPGM. The difference in problem gambling measures makes a direct comparison difficult and could potentially explain some of the variance between the two survey results. (Note, research by Williams and Volberg (2010) suggests that a PPGM designation of problem gambling is equivalent to a SOGS score of four or higher). Also, cultural differences in gambling attitudes and behaviour between Australian and Canada could account for some of the variance.

Does Gambling Addiction Cause the Gambling-Related Crime?

The data demonstrate that a small percentage of problem gamblers report committing crime to support their gambling habits. The presumption is that the gambling addiction caused the criminal activity, and this was also how the questions were worded (i.e., “has your gambling caused you to...”). Nonetheless, this causal link is not unambiguously established. As discussed earlier, a significant percentage of problem gamblers have antisocial traits which puts them at greater risk of committing crime in the first place (even if they did not have a gambling addiction). Blaszczyński and McConaghy (1994b) found in a population of New South Wales problem gamblers in treatment that 59% admitted to committing at least one criminal offence over their gambling careers; however, 48% of these individuals reported committing only gambling-motivated offences, and 18% admitted to committing at least one non-gambling related criminal offence over their lifetime.

Thus, the best estimate is that most, but not all, of this ‘gambling-related crime’ identified in the present study is indeed caused by the gambling addiction.

What Portion of Overall Crime is Attributable to Problem Gambling?

Examination of police records in the present study found that only 0.6% of detected crime can be unambiguously attributed to gambling. This represents a very small percentage of overall crime in Alberta. This result is similar to what was found by Smith, Wynne, and Hartnagel (2003) in their examination of Edmonton police records for 2001 using a very similar methodology. These investigators found a 2.7% rate of gambling-related crime (338/11,198)¹⁸ among the files they examined. Presumably, the 2.7% rate is higher than our 0.6% rate primarily because Smith et al. (2003) only searched for gambling-related incidents in crime categories that were deemed to be most likely to contain these events¹⁹, as opposed to the examination in all categories as was done in the present study (thus, their rate would be lower if their denominator was the total number of incidents in *all* categories in 2001). This does not negate the possibility that there may also be true differences between the rates due to different time periods and different communities (both of which might favor higher rates in the aforementioned study).

Although the rate of gambling-related crime appears to be quite low, it must be remembered that these police records significantly underestimate the number

¹⁸ Smith et al. did not use key word searches, rather, they used a 20% sampling procedure to reduce the amount of cases to be reviewed in high volume crime categories (family disputes, cocaine trafficking, and robbery) the 338 incident rate is an estimated number that combines the 234 cases that were identified among the 5196 files examined, plus 104 cases projected to occur in the additional 6002 files that were not examined.

¹⁹ Murder, Attempted Murder, Manslaughter, Extortion, Robbery, Counterfeiting, Fraud, Betting house, Gaming House, Other Gaming & Betting, Organized Crime Occurrence, Cocaine Trafficking, Suicides, Attempted Suicides, Family Disputes.

and proportion of gambling-related incidents. For gambling involvement to be recorded in a case file 1) the actual gambling-related involvement has to be present, 2) the responding officer would have to be aware of the gambling-related involvement, and 3) the responding officer would have to feel that it was important to record the gambling-related involvement.

What Type of Crime is Associated with Gambling?

Although the absolute proportion of gambling-related crime in Alberta is difficult to establish, the type of gambling-related crime is more certain. Congruent with the current study, Smith, Wynne, and Hartnagel (2003), in terms of the most common gambling-related incidents, found that fraud-related offences were the second most common gambling-related offence (22.1% of the 208 incidents), domestic disputes were the third most common (7.7% of the 208 incidents), and suicides and attempted suicides were the fourth most common (1.9% of the 208 incidents). Theft, which was an important category in the present study, was not assessed in Smith et al.

The most important difference between the current study and Smith, Wynne and Hartnagel (2003) is that 62.5% of the 208 gambling-related incidents reported in Smith et al. involved passing counterfeit currency, whereas there were no such gambling-related incidents identified in the present study. The high rate of counterfeiting in Smith et al. was attributed to the fact that counterfeit bills would presumably be less likely to be detected in the high volumes of cash that are circulated in gambling venues.

However, there is some anecdotal evidence in the police data examined for Medicine Hat and Lethbridge. In the present study, all of the cases that documented counterfeit money being “passed” at a casino were cases where the patron allegedly did not know that the bill was counterfeit and the authorities deemed the patron to be telling the truth (e.g., an elderly woman who patronizes the casino on a weekly basis and is known by name). Because there was no actual crime in these cases, they were not included in the current analysis. It is unknown if the counterfeit incidence in the Smith, Wynne, and Hartnagel (2003) are incidences where the individual knowingly passed counterfeit (true crime), or if the individual was just trying to spend a counterfeit bill that they had unknowingly received elsewhere (not a true crime).

Notable in both studies is the absence of incidents associated with loan-sharking, money laundering, and cheating-at-play, all of which undoubtedly occur to some extent.

It is clear that most crimes that are gambling related are income-generating crime, alcohol related offenses, and domestic disputes.

Has Increased Legal Gambling Availability Decreased Illegal Gambling?

The Statistics Canada data unambiguously shows a decrease in illegal gambling coincident with increased legal gambling availability. Gill Hermanns, Executive Director of the Regulatory Control Division of AGLC, also anecdotally confirmed this decrease in illegal gambling; however, he also cautioned that illegal gambling still exists. Illegal gambling statistics seem to have reached a plateau in 2000 and have remained relatively constant for the past 20 years at approximately

0.5 incidents per 100,000 people. Rates of illegal gambling are most likely significantly higher than reported rates because, like most crime, illegal gambling is likely under reported and undetected. Furthermore, illegal gambling is often seen as a “victimless crime” and police have taken a reactionary approach to illegal gambling, potentially heightening the under reporting and under detecting effect (Smith and Wynne, 1999). Also, there is no accurate way of triangulating this underestimation. Nevertheless, illegal gambling in 2009 is down to 0.5 incidents per 100,000 from 22.6 per 100,000 in 1967.

Has the Introduction of Legalized Gambling Increased Overall Crime in Alberta?

The most unambiguous findings of this study are that gambling-related crime constitutes a very small percentage of all crime; crime that is gambling-related tends to be non-violent property crime; and increased legal gambling availability has significantly decreased rates of illegal gambling.

In terms of the impact of legalized gambling on overall crime rates in Alberta, the evidence would suggest that legalized gambling has likely had a minor or negligible impact.

It is true that a small percentage of problem gamblers (~7%) report committing offences as part of their addiction and that the introduction of legal gambling opportunities likely has increased the rate of problem gambling. However, problem gamblers only constitute 2% to 3% of the population and some of this ‘gambling-related crime’ would have been committed by these individuals in any case. Thus, the net impact on overall crime rates is very small.

It is also true that gambling venues theoretically provide some additional opportunities for crime to occur. Furthermore, the evidence presented in this thesis confirms that some of these types of incidents do indeed occur at gambling venues. However, the number of these incidents is very small relative to the total number of crime-related incidents; some of these incidents would have occurred at other venues if gambling venues did not exist; and the academic literature indicates that overall rates of crime are usually unchanged when controlling for the increases in population that occur with new gambling venues.

Of final note, even if there are minor increases in crime due to the above two factors, the introduction of legal gambling has been associated quite a significant decrease in rates of illegal gambling, which likely offsets any increase in criminogenic or gambling-venue related crime.

References

- AGLC (2012). *Gaming Policies, Procedures and Handbooks*. Alberta Gaming and Liquor Commission Website. Assessed May 7, 2012 from <http://aglc.ca/policies/default.asp>
- Albanese, J. (1985). The effect of casino gambling on crime, *Federal Probation*, 48, 39-44.
- Babor, T., Caetano, R., Casswell, S., Edwards, G., Giesbrecht, N., Graham, K., Grube, J., Rossow, I. (2010). *Alcohol: No Ordinary Commodity: Research and Public Policy (2nd Edition)*. Oxford: Oxford University Press.
- Babor, T., Caulkins, J., Edwards, G., Fischer, B., Foxcroft, D., Humphreys, K., Obot, I., Rehm, J., Reuter, P., Room, R., Rossow, I., & Strang, J. (2010). *Drug Policy and the Public Good*. Oxford: Oxford University Press.
- Barthe, E., & Stitt, B. (2007). Casinos as “hot spots” and the generation of crime. *Journal of Crime and Justice*, 30, 115-40
- Barthe, E., & Stitt, B. (2009a). Impact of casinos on criminogenic patterns, *Police Practice and Research*, 10 (2), 255-69.
- Barthe, E., & Stitt, B. (2009b). Temporal distributions of crime and disorder in casino and non-casino zones. *Journal of Gambling Studies*, 25 (2), 139-52.
- Becker, G. (1968). Crime and punishment: an economic approach. *Journal of Political Economy*, 76 (2), 675-700.
- Belanger, Y.D. (2011). Toward an innovative understanding of North American Indigenous gaming in historical perspective. In Y. D. Belanger (ed.). *First Nations Gaming in Canada*. pp. 10-34. Winnipeg: University of Manitoba Press.

- Binde, P. (2007). Gambling and religion: Histories of concord and conflict. *Journal of Gambling Issues*, 20, pp. 145-165. doi: 10.4309/jgi.2007.20.4
- Blaszczynski, A., & McConaghy, N. (1994). Antisocial personality disorder and pathological gambling. *Journal of Gambling Studies*, 10, 129-145.
- Blaszczynski, A., & Silove, (1996). Pathological gambling: Forensic issues. *Australian and New Zealand Journal of Psychiatry*, 30, 358-369.
- Blaszczynski, A., Steel, Z., & McConaghy, N. (1997). Impulsivity in pathological gambling: The antisocial impulsivist. *Addiction*, 92, 75-87.
- Blaszczynski, A., Wilson, A. C., & McConaghy, N. (1986). Sensation seeking and pathological gambling. *British Journal of Addiction*, 81, 113-117.
- Buck, A., Hakim, S., & Spiegel, U. (1991). Casinos, crime, and real estate values: do they relate? *Journal of Research in Crime and Delinquency*, 28 (3), 288-303.
- Campbell, C. (1994). *Canadian Gambling Legislation: The Social Origins of Legalization*. (Doctoral Dissertation). British Columbia, Canada: Simon Fraser University.
- CASRO (1982). Council of American Survey Research Organizations. *Special Report: On the Definition of Response Rates*. Port Jefferson, NY: CASRO.
- Chang, S. (1996). The impact of casinos on crime: the case of Biloxi, Mississippi. *Journal of Criminal Justice*, 24(5), 431-436.
- Chipman, M., Govoni, R., & Roerecke, M. (2006). *The Distribution of Consumption Model: An Evaluation of its Applicability to Gambling Behaviour*. Final Report prepared for the Ontario Problem Gambling Research Centre.

- Cohen, L., & Felson, M. (1979). Social change and crime rate trends: A routine activity approach. *American Sociological Review*, 44, 588-608.
- Cook, P. J. (2007). *Paying the Tab: The Costs and Benefits of Alcohol Control*. Princeton, NJ: Princeton University Press.
- Cook, P. J., & Moore, M. J. (2002). The economics of alcohol abuse and alcohol-control policies. *Health Affairs*, 21(2), 120-133.
- Culin, S. (1907). *Games of the North American Indians*. New York: Dover.
- Cunningham-Williams, R. M., Crucza, R. A., Cottler, L. B., Womack, S. B., Books, S. J., Przybeck, T. R., et al. (2005). Prevalence and predictors of pathological gambling: Results from the St. Louis personality, health and lifestyle (SLPHL) study. *Journal of Psychiatric Research*, 39, 377-390.
- Curran, D., & Scarrpitti, F. (1991). Crime in Atlantic City: do casinos make a difference? *Deviant Behavior*, 12, 431-449.
- Ferentzy, P., & Turner, N. (2009). Gambling and organized crime-A review of the literature. *Journal of Gambling Studies*, 23, 111-155.
- Friedman, J., Hakim, S., & Weinblatt, J. (1989). Casino gambling as a “growth pole” strategy and its effects on crime. *Journal of Regional Science*, 29(4), 615-623.
- Giacopassi, D., & Stitt, B. (1993). Assessing the impact of casino gambling on crime in Mississippi. *American Journal of Criminal Justice*, 18 (1), 117-131.
- Giacopassi, D. Stitt, B., & Nichols, M. (2000). Including tourists in crime rate calculations for new casino jurisdictions: What difference does it make? *American Journal of Criminal Justice*, 24 (2), 203-215.

- Giacopassi, D. Stitt, B., & Nichols, M. (2001). Community perception of casino gambling's effect on crime in new gambling jurisdictions. *The Justice Professional, 14*, 151-170.
- Grinols, E., & Mustard, D. (2006). Casinos, crime, and community costs. *Review of Economics and Statistics, 21*-31.
- Gruenewald, P. J., Ponicki, W. R., & Holder, H. D. (1993). The relationship of outlet densities to alcohol consumption: A time series cross-sectional analysis. *Alcoholism: Clinical and Experimental Research, 17*(1), 38-50.
- Grun, L., & McKeigue, P. (2000). Prevalence of excessive gambling before and after introduction of a national lottery in the United Kingdom: Another example of the single distribution theory. *Addiction, 95*(6), 959-966.
- Hakim, S., & Buck, A. (1989). Do casinos enhance crime? *Journal of Criminal Justice, 17* (5), 409-416.
- Hansen, M., & Rossow, I. (2012). Does a reduction in the overall amount of gambling imply a reduction at all levels of gambling? *Addiction Research and Theory, 20* (2), 145-152.
- Hybels, J. (1979). The impact of legalization on illegal gambling participation. *Journal of Social Issues, 35*, 27-35.
- Langewisch, M. W.J., & Frisch, G. R. (1998). Gambling behaviour and pathology in relation to impulsivity, sensation seeking, and risky behaviour in male college students. *Journal of Gambling Studies, 14*, 245-262.

- LaPlante, D. A., & Shaffer, H. J. (2007). Understanding the influence of gambling opportunities: Expanding exposure models to include adaptation. *American Journal of Orthopsychiatry*, 77(4), 616-623.
- Lesieur, H. (1984). *The Chase: Career of the Compulsive Gambler*. Cambridge, MA: Schenkman.
- Lester, D. (1994). Access to gambling opportunities and compulsive gambling. *International Journal of the Addictions*, 29(12), 1161-1616.
- McDaniel, S. R., & Zuckerman, M. (2003). The relationship of impulsive sensation seeking and gender to interest and participation in gambling activities. *Personality and Individual Differences*, 35, 1385-1400.
- Meyer, G., & Fabian, T. (2005). Delinquency among pathological gamblers: A causal approach. *Journal of Gambling Studies*, 8, 61-77.
- Meyer, G., & Stadler, (1999). Criminal behavior associated with pathological gambling. *Journal of Gambling Studies*, 15(1), 29-43.
- Miller, W., & Schwartz (1998). Casino gambling and street crime. *Annals of the American Academy of Political & Social Science*, 556, 124-137.
- Mishra, S., Lalumière, M. L., Morgan, M., & Williams, J. (2011). An Examination of the relationship between gambling and antisocial behaviour. *Journal of Gambling Studies*, 27, 409-426. DOI: 10.1007/s10899-010-9217-x
- Moodie, L. (2002). *Ontario's Organized Crime Section-Illegal Gambling Unit: Is Evolution and Accomplishments*. Paper presented at the Gambling, Law Enforcement and Justice System Issues Conference, University of Alberta, Edmonton, AB, March.

National Gambling Impact Study Commission [NGISC] (1999). Washington, D.C.:

Government Printing Office.

Neal, P., Delfabbro, P., & O'Neil, M. (2005). *Problem Gambling and Harm: Towards a*

National Definition. Commissioned for the Ministerial Council on Gambling.

Prepared by the SA Centre for Economic Studies with the Department of

Psychology, University of Adelaide. November 2005.

<http://www.adelaide.edu.au/saces/gambling/publications/ProblemGamblingAndHarmTowardNationalDefinition.pdf>.

Ochrym, R. (1990). Street crime, tourism, and casinos: an empirical comparison.

Journal of Gambling Studies, 6 (2), 127-138.

Pearce, J. Mason, K., Hiscock, R., & Day, P. (2008). A national study of neighbourhood

access to gambling opportunities and individual gambling behaviour. *Journal of Epidemiology and Community Health*, 62 (10). 862-868.

Proke, L. (1994). When legalized gambling comes to your community: Legalized

gambling and its effect on law enforcement. *The Police Yearbook*, 53, 54-61.

Reece, W. (2010). Casinos, hotels, and crime. *Contemporary Economic Policy*. DOI:

10.1111/j.1465-7287.2009.00172.x.

Rosenthal, R., & Lesieur, H. (1996). Pathological gambling and criminal behavior. In

L. Schlesinger, (Ed.), *Explorations in Criminal Psychopathology*. Springfield,

Illinois: Charles C. Thomas.

Rose, G. (1985). Sick individuals and sick populations. *International Journal of*

Epidemiology, 14, 32-38.

- Rose, G. & Day, S. (1990). The population mean predicts the number of deviant individuals. *British Medical Journal*, 301, 1031-1034.
- Rosenthal, R., & Lorenz, V. (1992). The pathological gambler as criminal offender. Comments on evaluation and treatment. *Clinical Forensic Psychiatry*, 15(3), 647-660.
- Rush, B. R., Gliksman, L., & Brook, R. (1986). Alcohol availability, alcohol consumption and alcohol-related damage: The distribution of consumption model. *Journal of Studies on Alcohol*, 47(1), 1-10.
- Shaffer, H. J., & Hall, M. N. (2001). Updating and refining meta-analytic prevalence estimates of disordered gambling behavior in the United States and Canada. *Canadian Journal of Public Health*, 92(3), 168-172.
- Shaffer, H. J., Hall, M. N., & VanderBlit, J. (1997). *Estimating the Prevalence of Disordered Gambling Behaviour in the United States and Canada: A Meta-Analysis*. Boston, MA: Harvard Medical School Division on Addiction.
- Shaffer, H. J., LaBrie, R. A., & LaPlante, D. (2004). Laying the foundation for quantifying regional exposure to social phenomena: Considering the case of legalized gambling as a public health toxin. *Psychology of Addictive Behaviors*, 18(1), 40-48.
- Sherman, L. W., Gartin, P. R., & Buerger, M. E. (1989). Hot spots of predatory crime: Routine activities and the criminology of place. *Criminology*, 27, 27-55.
- Skitch, S., & Hodgins, D. (2004). Impulsivity, compulsivity and pathological gambling as an impulsivity-compulsivity spectrum disorder. *International Gambling Studies*, 4, 175-188.

- Slutske, W. S. (2006). Natural recovery and treatment-seeking in pathological gambling: results of two US national surveys. *American Journal of Psychiatry* 163, 297-302.
- Slutske, W. S., Eisen, S., Xian, H., True, W. R., Lyons, M. J., Goldberg, J., & Tsuang, M. (2001). A twin study of the association between pathological gambling and antisocial personality disorder. *Journal of Abnormal Psychology*, 2, 297-308.
- Smith, G., & Wynne, H. (1999). *Gambling and Crime in Western Canada: Exploring Myth and Reality*. Report prepared for the Canada West Foundation.
- Smith, G., Wynne, H., & Hartnagel, T. (2003). *Examining Police Records to assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton*. Edmonton: Alberta Gaming Research Institute.
- Stitt, B., Nichols, M., & Giacomassi, D. (2003). Does the presence of casinos increase crime? An examination of casino and control communities. *Crime and Delinquency*, 49 (2), 253-284.
- Stokowski, P. (1996). Crime patterns and gaming development in rural Colorado. *Journal of Travel Research*, 34 (3), 63-69.
- Storer, J., Abbott, M., & Stubbs, J. (2009). Access or adaptation? A meta-analysis of surveys of problem gambling prevalence in Australia and New Zealand with respect to concentration of electronic gaming machines. *International Gambling Studies*, 9(3), 225-244.
- Suurvali, H., Hodgins, D., Toneatto, T., & Cunningham, J. (2008). Treatment seeking among Ontario problem gamblers: Results of a population survey. *Psychiatric Services*. Doi:10.1176/ appi.ps.59.11.1343

- Toneatto, T., & Nguyen, L. (2007). Individual characteristics and problem gambling behavior. In G. Smith, D. C. Hodgins, & R. J. Williams (Eds.), *Research and Measurement Issues in Gambling Studies* (pp. 279-303). Amsterdam: Elsevier.
- Topoleski, J. H. (2003). *The Social and Economic Impact of Native American Casinos*. United States, Maryland: University of Maryland, College Park. Ph.D.
- Turner, N.E., Fritz, B., & Zangeneh, M. (2007). Images of gambling in film. *Journal of Gambling Issues*, 20.
<http://www.camh.net/egambling/issue20/02turner.htm>.
- Walker, D. M. (2010). Casinos and Crime in the USA. In B. L. Benson, & P. R. Zimmerman (Eds.) *Handbook on Economics of Crime*. Edward Elgar Publishing.
- Welte, J. W., Barnes, G.M., Tidwell, M. C. O., & Hoffman, J. H. (2009). Legal gambling availability and problem gambling among adolescents and young adults. *International Gambling Studies*, 9(2), 89-99.
- Welte J. W., Wieczorek, W. F., Barnes, G. M., Tidwell, M. C., & Hoffman, J. H. (2004). The relationship of ecological and geographic factors to gambling behavior and pathology. *Journal of Gambling Studies*, 20(4), 405-423.
- Wildman, R. (1997). *Gambling: An Attempt at Integration*. Edmonton, AB: Wynne Resources, Inc.
- Williams, R. J., Belanger, Y. D., & Arthur, J. N. (2011). *Gambling in Alberta: History, Current Status, and Socioeconomic Impacts*. Final Report to the Alberta Gaming Research Institute. Edmonton, Alberta. April 2, 2011.
<http://hdl.handle.net/1880/48495>

- Williams, R. J., Rehm, J., & Stevens, R. M. G. (2011). *The Social and Economic Impacts of Gambling*. Final Report to the Canadian Interprovincial Consortium for Gambling Research. March 11, 2011. <http://hdl.handle.net/10133/1286>
- Williams, R.J., Royston, J., & Hagen, B. (2005). Gambling and problem gambling within forensic populations: A review of the literature. *Criminal Justice & Behavior: An International Journal* 32 (6), 665-689.
<http://hdl.handle.net/10133/411>
- Williams, R.J., & Volberg, R.A. (2010). *Best Practices in the Population Assessment of Problem Gambling*. Final Report to the Ontario Problem Gambling Research Centre. March 31, 2010. <http://hdl.handle.net/10133/1259> .
- Williams, R.J., Volberg, R.A. & Stevens, R.M.G. (2012). *The Population Prevalence of Problem Gambling: Methodological Influences, Standardized Rates, Jurisdictional Differences, and Worldwide Trends*. Report prepared for the Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care. May 8, 2012.
- Williams, R.J., West, B.L., & Simpson, R.I. (2008). *Prevention of Problem/Pathological Gambling: A Comprehensive Review of the Evidence*. Report prepared for the Ontario Problem Gambling Research Centre. Guelph, Ontario, Canada. December 1, 2008. <http://hdl.handle.net/10133/414>
- Wood, R.T. & Williams, R.J. (2007). How much money do you spend on gambling? The comparative validity of question wordings used to assess gambling expenditure. *International Journal of Social Research Methodology: Theory & Practice*, 10 (1), 63-77.

Appendices²⁰

Appendix A: 2008 and 2009 Alberta Population Surveys

2008 Survey

Sample

There were 3 samples collected in 2008:

- General Population Telephone Sample ($N = 3,001$).
 - This sample was recruited by means of random digit dialling of Alberta telephone numbers. The telephone number databank from which numbers were randomly drawn included unlisted numbers, but excluded cell phones to reduce multiple sampling of the same household.
 - A minimum sample size of 3,000 was sought and a minimum quota of 40% male respondents was required.
- Targeted Telephone Sample ($N = 4,512$).
 - A minimum total sample size of 4,500 was sought with a minimum of 500 people sampled from each of the 9 following geographic areas: 4 areas that did not have casinos prior to their introduction in late 2007/early 2008 (Cold Lake area; Whitecourt area; Camrose area; Morley area), and 5 areas that have had casinos for many years (Fort McMurray area; Grande Prairie area; Red Deer area; Medicine Hat area; Lethbridge area).
 - The geographic range for each area was 75 km (50 km for Morley and Camrose) and was not restricted to Alberta (mostly relevant for the Cold Lake and Medicine Hat areas).
 - This sample was recruited by random sampling of *listed* telephone numbers from communities within the geographic range.
 - A minimum quota of 40% male respondents was required.
- Online Sample ($N = 2,019$)
 - The purpose of collecting an online sample was to investigate whether prevalence rates obtained with this method would approximate the rates obtained with telephone surveys (in light of the steadily declining response rates of telephone surveys).
 - A minimum total sample size of 2,000 was sought.
 - These individuals were recruited via email solicitation to the Alberta online panelists who were members of Consumer Contact's Canadian online panel (ResearchByNet Online Panel). Because of insufficient numbers, the ResearchByNet Online Panel was supplemented with Alberta online panellists from other survey companies (21% supplementation).

²⁰ Appendices A,B,and C are reproduced with consent of the authors from Williams, Belanger, and Arthur (2011).

Response Rate

An overall response rate of 25.5% to the General Population telephone survey and 23.3% to the Targeted telephone survey was achieved using response rate calculations of the Council of American Survey Research Organizations (CASRO, 1982). Essentially, this is the number of completed interviews divided by the estimated number of eligible respondents.

| | General Population | Targeted |
|-------------------------------------------------------------------------------------------------|-----------------------|------------------|
| INELIGIBLE NUMBERS | <i>n</i> = 19483 | <i>n</i> = 13351 |
| Not in Service | 11689 | 7339 |
| Fax/Modem/Cell | 2881 | 1414 |
| Business Number | 1691 | 561 |
| Dialler Returns | 18 | 9 |
| Bad Line/Inaudible/Disconnected | 113 | 270 |
| Language Difficulties | 300 | 199 |
| Illness, Incapable | 13 | 31 |
| No one in Household 18+ | 95 | 86 |
| Selected/Eligible Respondent not Available | 2683 | 3442 |
| ELIGIBILITY NOT DETERMINED | <i>n</i> = 12846 | <i>n</i> = 16354 |
| Busy | 251 | 187 |
| Answering Machine | 3079 | 4888 |
| No Answer | 6487 | 6874 |
| Household Refusal | 3029 | 4405 |
| ELIGIBLE | <i>n</i> = 8012 | <i>n</i> = 11689 |
| Respondent Refusal | 5010 | 7177 |
| Completed Interviews | 3002 | 4512 |
| Eligibility rate: Eligibles ÷ (Eligibles + Ineligibles) | 29.1% | 46.7% |
| Estimated # of Eligibles: Eligibles + (Eligibility not Determined x Eligibility Rate) | 11750 | 19326 |
| Response rate: Completions ÷ Estimated # of Eligibles | 25.5% | 23.3% |

Weighting

To ensure that the sample was a representative sample of Albertan adults, the data was weighted by: a) *household size* to correct for the undersampling of individuals from large households and the oversampling of people from small households; and b) *age by gender* to ensure that the sample approximated the prevalence of each age by gender grouping in the 2006 Canadian census (essentially correcting for the undersampling of males and younger people that typically occurs in telephone surveys).

Questionnaire

The Questionnaire in both years (presented below) had 3 sections:

1. *Gambling*. With subsections of: Gambling Attitudes; Past Year Gambling Behaviour (using questions with optimal wording to collect this information, Wood & Williams, 2007b); Gambling Motivation; Gambling Recreation/Entertainment; and Problem Gambling. The Problem Gambling subsection included 2 scales, the Canadian Problem Gambling Index (CPGI) (Ferris & Wynne, 2001), and the Problem and Pathological Gambling Measure (PPGM) (Williams & Volberg, 2010).
2. *Comorbidities*. Nine questions that inquired about substance use, other addictive behaviour, stress, mental health, and physical health.
3. *Demographics*. Marital status, educational attainment, employment status, personal income, debt, immigrant status, ethnic/cultural origins, and community of residence.

SEIGA 2008 POPULATION SURVEY: CATI & ONLINE PANEL

GROUP

G1. Group

- General Population (1)
- Targeted (2)
- (Online (3)

RECRUITMENT (CATI)

R1. Hello. I'm _____ calling from Consumer Contact on behalf of the Universities of Lethbridge and Alberta. We have a short study about gambling in Alberta. We are interested in the opinions of both nongamblers and gamblers. I would like to speak with the adult 18 or older whose birthday comes next. Is that person available?

- No (0) (arrange for callback)
- Yes (1)

I'll start by giving you a little bit of information about this study. (Note: provided only if requested)

- It takes about 10-15 minutes to complete for most people.
- The purpose of this research is to help researchers understand the social and economic impact of gambling in this province.
- You do not have to answer questions you do not want to, and you can stop participation at any time.
- All information you provide is strictly confidential.
- We do not need to know your name, and your telephone number will be removed from the data set once all data collection is completed. Also, only group results will be reported when the study is published.
- This study has no known risks. However, some of the questions do ask about sensitive issues. Note: telephone numbers for appropriate local treatment resources will be provided to anyone in obvious distress at any point during the interview.
- The data will be stored on a computer in a secure location at the University of Lethbridge. The only people having access to this data are members of the Research Team, headed by Dr. Robert Williams of the University of Lethbridge.
- If you have any questions regarding this study, you can contact Dr. Robert Williams at 403-382-7128.
- This study has received ethics clearance through the University of Lethbridge Office of Research Ethics. Questions about your rights as a participant in this research may be addressed to the Office of Research Services, University of Lethbridge (403-329-2747).
- If you are interested in seeing the Final Report for this study, it will be available from the Alberta Gaming Research Institute website in July 2010.

RECRUITMENT (ONLINE)

Subject Line: New Survey From ResearchByNet

Intro of e-mail:

We currently have a short survey about gambling in Alberta being conducted by the University of Lethbridge. We are interested in the opinions of both gamblers and nongamblers. This survey will take 10 TO 15 MINUTES to complete for most people.

The following is some information about this survey. Please review and hit the "Next Page" button when finished.

- It takes about 10-15 minutes to complete for most people.
- The purpose of this research is to help researchers understand the social and economic impact of gambling in this province.
- You do not have to answer questions you do not want to, and you can stop participation at any time.
- All information you provide is strictly confidential.
- We do not need to know your name, and your telephone number will be removed from the data set once all data collection is completed. Also, only group results will be reported when the study is published.
- This study has no known risks. However, some of the questions do ask about sensitive issues.
- The data will be stored on a computer in a secure location at the University of Lethbridge. The only people having access to this data are members of the Research Team, headed by Dr. Robert Williams of the University of Lethbridge.
- If you have any questions regarding this study, you can contact Dr. Robert Williams at 403-382-7128.
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- If you are interested in seeing the Final Report for this study, it will be available from the Alberta Gaming Research Institute website in July 2010.

ELIGIBILITY

D1. Gender (do not ask)

- Male (1)
- Female (2)

D2. In what year were you born? _____

- refused (9999) (still included even if don't provide age)

GAMBLING

Before we start, we would like to provide our definition of gambling: We define gambling as wagering money or material goods on something with an uncertain outcome in the hopes of winning additional money or material goods. It includes things such as lottery tickets, scratch 'n win tickets, bingo, betting against a friend on a game of skill or chance, investing in high risk stocks, etc. Provide definition of high risk stock if necessary (hyperlink available to online).

Note: for the CATI Questionnaire the 'unsure' and 'refused' options are never read. This is the same for the Online Questionnaire, except that 'prefer not to answer' is provided as an option for all demographic questions.

GAMBLING ATTITUDES

GA1. Which best describes your belief about the benefit or harm that gambling has for society? Would you say

- The harm far outweighs the benefits (-2)
- The harm somewhat outweighs the benefits (-1)
- The benefits are about equal to the harm (0)
- The benefits somewhat outweigh the harm, or (+1)
- The benefits far outweigh the harm (+2)
- unsure (8888)
- refused (9999)

GA2. Do you believe that gambling is morally wrong? (do not read options)

- No (+1)
- Yes (-1)
- Unsure (0)
- Refused (9999)

GA3a. Which of the following best describes your opinion about legalized gambling?

- all types of gambling should be legal (+1) (go to GA4)
- some types of gambling should be legal and some should be illegal. (0)
- all types of gambling should be illegal. (-1) (go to GA4)
- unsure (8888) (go to GA4)
- refused (9999) (go to GA4)

GA3b. Which types do you believe should be illegal_____ (read out if necessary)

- Lottery (1)
- Instant win ticket (2)
- Bingo (3)
- Electronic Gambling machines (slots, VLTs, etc.) (4)
- Casino table games (i.e., blackjack, baccarat, roulette, craps, etc.) (5)

- Games against other people (e.g., poker, pool, etc.) (6)
- Horse racing (7)
- Sports Betting (8)
- High risk stocks, options, futures, or day trading (9)
- Internet gambling (10)
- Other_____ (91)
- unsure (8888)
- refused (9999)

GA4. Which of the following best describes your opinion about gambling opportunities in Alberta?

- Gambling is too widely available (-1)
- Gambling is not available enough, or (1)
- The current availability of gambling is fine. (0)
- unsure (8888)
- refused (9999)

GA5. What sort of overall impact do you believe the casino or casinos in your local region have had for your community? Would you say

- very beneficial (+2)
- somewhat beneficial (+1)
- neither beneficial nor harmful (0)
- somewhat harmful, or (-1)
- very harmful (-2)
- unsure (8888)
- refused (9999)

PAST YEAR GAMBLING BEHAVIOUR

GY1a. In the past 12 months, how often have you purchased **lottery tickets** such as 6/49 and Super 7? Would you say about

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY2a)
- Unsure (8888)
- refused (9999)

GY1b. Roughly how much money do you spend on lottery tickets in a typical month? Spend means how much you are ahead (+\$) or behind (-\$), or your net win or loss in an average month in the past 12 months. -\$_____ Note: all gambling expenditure figures in the data file have to be preceded by a '+' or '-' or else have separate columns for losses versus wins. Note: for online, there is always a negative sign in

the amount box to imply a loss, but people can remove it if they wish to denote a win. Would you say

- Unsure (8888)
- refused (9999)

GY2a. In the past 12 months, how often have you purchased **instant win tickets** such as scratch & win, pull tabs, breakopens, or Nevada tickets? Spend means how much you are ahead (+\$) or behind (-\$), or your net win or loss in an average month in the past 12 months. Note: this definition of 'spend' is not mentioned again for any of the other expenditure questions.

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY3a)
- Unsure (8888)
- refused (9999)

GY2b. Roughly how much money do you spend on instant win tickets in a typical month? -\$_____ Spend means how much you are ahead (+\$) or behind (-\$), or your net win or loss in an average month in the past 12 months.

- Unsure (8888)
- refused (9999)

GY3a. In the past 12 months, how often have you bet money on **sporting events** (this includes sports pools and Sports Select tickets)?

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY4a)
- Unsure (8888)
- refused (9999)

GY3b. Roughly how much money do you spend on sports betting in a typical month? -\$_____

- Unsure (8888)
- refused (9999)

GY4a. In the past 12 months, how often have you gone to a **bingo hall** to gamble? Would you say

- 4 or more times a week (6)

- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY5a)
- Unsure (8888)
- refused (9999)

GY4b. Roughly how much money do you spend at bingo halls in a typical month? (includes bingo, keno, satellite bingo) -\$_____

- Unsure (8888)
- refused (9999)

GY4c. Which bingo hall do you go to most often? _____

- Unsure (8888)
- refused (9999)

GY5a. In the past 12 months, how often have you played **video lottery terminals** at a local bar or lounge? Would you say

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY6a)
- Unsure (8888)
- refused (9999)

GY5b. Roughly how much money do you spend on video lottery terminals in a typical month? -\$_____

- Unsure (8888)
- refused (9999)

GY5c. Do you normally play video lottery terminals in your home community or city, or outside your home community?

- Home community (go to GY6a)
- Outside home community
- Both (do not read)
- Unsure (8888)
- refused (9999) (go to GY6a)

GY5d. Which outside community would that be? _____

GY6a. In the past 12 months, how often have you played **slot machines** at an Alberta casino or racino? Would you say
Racing Entertainment Centres's are racinos.

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY7a)
- Unsure (8888)
- refused (9999)

GY6b. Roughly how much money do you spend on slot machines in a typical month?
-\$_____

- Unsure (8888)
- refused (9999)

GY6c. Which Alberta casino or racino do you most often go to play slot machines?

- Boomtown Casino – Ft. McMurray (1)
- Great Northern Casino – Grande Prairie (2)
- Evergreen Park – Grande Prairie (3)
- **Casino Dene – Cold Lake (4)**
- **Eagle River Casino – Whitecourt area (5)**
- Baccarat Casino – Edmonton (6)
- Casino Edmonton – Edmonton (7)
- Casino Yellowhead – Edmonton (8)
- Century Casino & Hotel – Edmonton (9)
- Palace Casino – Edmonton (10)
- Northlands Park – Edmonton (11)
- Gold Dust Casino – St. Albert (12)
- **River Cree Resort & Casino – Enoch (13)**
- **Camrose Resort Casino – Camrose (14)**
- Cash Casino – Red Deer (15)
- Jackpot Casino – Red Deer (16)
- Cash Casino – Calgary (17)
- Casino Calgary – Calgary (18)
- Deerfoot Inn & Casino – Calgary (19)
- Elbow River Casino – Calgary (20)
- Frank Sisson's Silver Dollar Casino – Calgary (21)
- Stampede Casino – Calgary (22)
- **Grey Eagle Casino – Calgary (23)**
- **Stoney Nakoda Entertainment Resort – Morley (24)**
- Casino by Vanshaw – Medicine Hat (25)
- Casino Lethbridge – Lethbridge (26)
- Whoop Up Downs & Bully's Sport & Entertainment Centre – Lethbridge (27)

- Other_____ (91)
- Unsure (8888)
- refused (9999)

GY6d. Which casino or racino did you most often go to play slot machines before this casino opened?

- Boomtown Casino – Ft. McMurray (1)
- Great Northern Casino – Grande Prairie (2)
- Evergreen Park – Grande Prairie (3)
- **Casino Dene – Cold Lake (4)**
- **Eagle River Casino – Whitecourt area (5)**
- Baccarat Casino – Edmonton (6)
- Casino Edmonton – Edmonton (7)
- Casino Yellowhead – Edmonton (8)
- Century Casino & Hotel – Edmonton (9)
- Palace Casino – Edmonton (10)
- Northlands Park – Edmonton (11)
- Gold Dust Casino – St. Albert (12)
- **River Cree Resort & Casino – Enoch (13)**
- **Camrose Resort Casino – Camrose (14)**
- Cash Casino – Red Deer (15)
- Jackpot Casino – Red Deer (16)
- Cash Casino – Calgary (17)
- Casino Calgary – Calgary (18)
- Deerfoot Inn & Casino – Calgary (19)
- Elbow River Casino – Calgary (20)
- Frank Sisson's Silver Dollar Casino – Calgary (21)
- Stampede Casino – Calgary (22)
- **Grey Eagle Casino – Calgary (23)**
- **Stoney Nakoda Entertainment Resort – Morley (24)**
- Casino by Vanshaw – Medicine Hat (25)
- Casino Lethbridge – Lethbridge (26)
- Whoop Up Downs & Bully's Sport & Entertainment Centre – Lethbridge (27)
- Did not gamble prior to this (0)
- Did not go to casinos prior to this (28)
- Just played VLTs (29)
- Saskatchewan casinos (30)
- British Columbia casinos (31)
- U.S. casinos (32)
- Casinos in provinces other than BC & SK (33)
- Other_____ (91)
- Unsure (8888)
- refused (9999)

GY7a. In the past 12 months, how often have you played **table games** such as blackjack, roulette, baccarat, poker, or craps at an Alberta casino? Would you say

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY7e if person scored 1 or more on GY6a. Otherwise, go to GY8a)
- Unsure (8888)
- refused (9999)

GY7b. Roughly how much money do you spend on casino table games in a typical month? - \$_____

- Unsure (8888)
- refused (9999)

GY7c. Which Alberta casino do you most often go to play casino table games?

- Boomtown Casino – Ft. McMurray (1)
- Great Northern Casino – Grande Prairie (2)
- Evergreen Park – Grande Prairie (3)
- **Casino Dene – Cold Lake (4)**
- **Eagle River Casino – Whitecourt area (5)**
- Baccarat Casino – Edmonton (6)
- Casino Edmonton – Edmonton (7)
- Casino Yellowhead – Edmonton (8)
- Century Casino & Hotel – Edmonton (9)
- Palace Casino – Edmonton (10)
- Northlands Park – Edmonton (11)
- Gold Dust Casino – St. Albert (12)
- **River Cree Resort & Casino – Enoch (13)**
- **Camrose Resort Casino – Camrose (14)**
- Cash Casino – Red Deer (15)
- Jackpot Casino – Red Deer (16)
- Cash Casino – Calgary (17)
- Casino Calgary – Calgary (18)
- Deerfoot Inn & Casino – Calgary (19)
- Elbow River Casino – Calgary (20)
- Frank Sisson's Silver Dollar Casino – Calgary (21)
- Stampede Casino – Calgary (22)
- **Grey Eagle Casino – Calgary (23)**
- **Stoney Nakoda Entertainment Resort – Morley (24)**
- Casino by Vanshaw – Medicine Hat (25)
- Casino Lethbridge – Lethbridge (26)
- Whoop Up Downs & Bully's Sport & Entertainment Centre – Lethbridge (27)
- Other _____ (91)
- Unsure (8888)

- refused (9999)

GY7d. Which casino did you most often go to play casino table games before this casino opened?

- Boomtown Casino – Ft. McMurray (1)
- Great Northern Casino – Grande Prairie (2)
- Evergreen Park – Grande Prairie (3)
- **Casino Dene – Cold Lake (4)**
- **Eagle River Casino – Whitecourt area (5)**
- Baccarat Casino – Edmonton (6)
- Casino Edmonton – Edmonton (7)
- Casino Yellowhead – Edmonton (8)
- Century Casino & Hotel – Edmonton (9)
- Palace Casino – Edmonton (10)
- Northlands Park – Edmonton (11)
- Gold Dust Casino – St. Albert (12)
- **River Cree Resort & Casino – Enoch (13)**
- **Camrose Resort Casino – Camrose (14)**
- Cash Casino – Red Deer (15)
- Jackpot Casino – Red Deer (16)
- Cash Casino – Calgary (17)
- Casino Calgary – Calgary (18)
- Deerfoot Inn & Casino – Calgary (19)
- Elbow River Casino – Calgary (20)
- Frank Sisson's Silver Dollar Casino – Calgary (21)
- Stampede Casino – Calgary (22)
- **Grey Eagle Casino – Calgary (23)**
- **Stoney Nakoda Entertainment Resort – Morley (24)**
- Casino by Vanshaw – Medicine Hat (25)
- Casino Lethbridge – Lethbridge (26)
- Whoop Up Downs & Bully's Sport & Entertainment Centre – Lethbridge (27)
- Did not gamble prior to this (0)
- Did not go to casinos prior to this (28)
- Just played VLTs (29)
- Saskatchewan casinos (30)
- British Columbia casinos (31)
- U.S. casinos (32)
- Casinos in provinces other than BC & SK (33)
- Other _____ (91)
- Unsure (8888)
- refused (9999)

GY7e only asked of people who score 1 or more on GY6a or GY7a.

GY7e. On average, how much would you estimate you spend on hotels, food, drinks, shopping or other attractions each time you visit your favourite casino? \$_____

- Unsure (8888)
- refused (9999)

GY8a. In the past 12 months, how many times have you gambled at a **casino outside of Alberta**? _____

- not at all (0) (go to GY9a)
- Unsure (8888)
- refused (9999)

GY8b. Roughly how much money do you spend per visit, this would include both your gambling and travel costs. \$_____

- Unsure (8888)
- refused (9999)

GY8c. Which province or state did you most often go to?

- Saskatchewan (1)
- British Columbia (2)
- Las Vegas/Nevada (3)
- Other _____ (91)
- Unsure (8888)
- refused (9999)

GY9a. In the past 12 months, how often have you bet on a **horse race** at either a horse race track or an off-track site? Would you say

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY10a)
- Unsure (8888)
- refused (9999)

GY9b. Roughly how much money do you spend on horse racing in a typical month? - \$_____

- Unsure (8888)
- refused (9999)

GY9c. Where do you most often go to bet on horse racing? (Do not read options)

- Evergreen Park – Grande Prairie (1)
- Northlands Park – Edmonton (2)
- Stampede Casino – Calgary (3)
- Whoop Up Downs & Bully's Sport & Entertainment Centre – Lethbridge (4)
- Teletheatre/Horses off Track Betting (5)
- Other _____ (91)

- Unsure (8888)
- refused (9999)

GY10a. In the past 12 months, how often did you purchase **high risk stocks, options or futures or day trade** on the stock market? Would you say

Note: A high risk stock is “a stock from a company that has a real risk of going out of business OR having their stock price double or triple in value in the next year”. A blue chip stock is “a stock from a well established company with good earning potential like Walmart or Microsoft that is also very unlikely to go out of business”. If person is unfamiliar with options or futures it is best to assume they do not purchase them rather than explaining what they are.

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY11a)
- Other_____ (91)
- Unsure (8888)
- refused (9999)

GY10b. What do you estimate is your net loss or gain in a typical month from high risk stocks, options, futures, or day trading? -\$_____ or +\$_____

- Unsure (8888)
- refused (9999)

GY11a. In the past 12 months, how often have you gambled or **bet money against other people** on things such as card games; golf, pool, darts, bowling; video games; board games, or poker outside of a casino? Would you say

Note: Poker played in a casino should be recorded under G7. Also, if asked, this question is not asking about games played on the Internet, which should be recorded under G12.

- 4 or more times a week (6)
- 2-3 times a week (5)
- once a week (4)
- 2-3 times a month (3)
- once a month (2)
- less than once a month, or (1)
- not at all (0) (Go to GY12a)
- Unsure (8888)
- refused (9999)

GY11b. Roughly how much money do you spend gambling or **betting money against other people** in a typical month? -\$_____

- Unsure (8888)

- refused (9999)

T1 and T2 not asked in the Online Questionnaire

T1. Do you personally use the Internet?

- yes (1)
- no (0) (go to GY13a)
- Unsure (8888)
- refused (9999)

T2. How often do you participate in Internet-based surveys?

- Never (0)
- Sometimes (1)
- Often (2)
- Unsure (8888)
- refused (9999)

GY12a. In the past 12 months have you used the **Internet for gambling**? This would include things such as playing poker, buying lottery tickets, betting on sports, bingo, slots or casino table games for money or playing interactive games for money?

- yes (1)
- no (0) (go to GY13a)
- Unsure (8888)
- refused (9999)

GY12b. Roughly how much money do you spend gambling on the Internet in a typical month? -\$_____

- Unsure (8888)
- refused (9999)

GY12c. What is the main type of Internet gambling you engage in? (read out if necessary)

- Lottery (1)
- Instant win ticket (2)
- Bingo (3)
- Slot machines or other electronic gambling machines (4)
- Casino table games (i.e., blackjack, baccarat, roulette, craps, etc.) (5)
- Games against other people (e.g., poker, pool, etc.) (6)
- Horse race betting (7)
- Sports Betting (8)
- High risk stocks, options, futures, or day trading (9)
- Other_____ (91)
- Unsure (8888)
- refused (9999)

GY13a. In the past 12 months, what is the largest amount of money you have ever lost to gambling in a single day?

-\$_____ (skip if no gambling in past 12 months; if 0 go to GY14a)

- Unsure (8888)
- refused (9999)

GY13b. What did you lose the money on? (read out if necessary)

- Lottery (1)
- Instant win ticket (2)
- Bingo (3)
- Slot machines or other electronic gambling machines (4)
- Casino table games (i.e., blackjack, baccarat, roulette, craps, etc.) (5)
- Games against other people (e.g., poker, pool, etc.) (6)
- Horse racing (7)
- Sports Betting (8)
- High risk stocks, options, futures, or day trading (9)
- Internet gambling (10)
- Other_____ (11)
- Unsure (8888)
- refused (9999)

GY14a. In the past 12 months, what do you recall your largest gambling winning on a single day to be? +\$_____

(skip if no gambling in past 12 months; if 0 go to GAMBLING MOTIVATION SECTION)

- Unsure (8888)
- refused (9999)

GY14b. What did you win the money on? (read out if necessary)

- Lottery (1)
- Instant win ticket (2)
- Bingo (3)
- Slot machines or other electronic gambling machines (4)
- Casino table games (i.e., blackjack, baccarat, roulette, craps, etc.) (5)
- Games against other people (e.g., poker, pool, etc.) (6)
- Horse racing (7)
- Sports Betting (8)
- High risk stocks, options, futures, or day trading (9)
- Internet gambling (10)
- Other_____ (91)
- Unsure (8888)
- refused (9999)

Go to COMORBIDITIES SECTION if person has not gambled in past 12 months (i.e., answers 'not at all' to GY1a, GY2a, GY3a, GY4a, GY5a, GY6a, GY7a, GY8a, GY9a, GY10a, GY11a, & GY12a) and score GR1 and GR2 as '0'.

GAMBLING MOTIVATION

GM1. What would you say is the main reason that you gamble? Would you say...

- For excitement/entertainment/fun (1)
- to win money (2)
- to escape or distract yourself (3)
- to socialize with family or friends (4)
- to support worthy causes, or (5)
- because it makes you feel good about yourself (6)
- Other_____ (91)
- Unsure (8888)
- refused (9999)

GAMBLING RECREATION/ENTERTAINMENT

GR1. How important is gambling to you as a recreational activity?

- very important (3)
- somewhat important (2)
- not very important (1)
- not at all important (0)
- Unsure (8888)
- refused (9999)

GR2a. Has gambling replaced other recreational activities for you in the past 5 years?

- No (0) (go to PROBLEM GAMBLING SECTION)
- Yes (1)
- Unsure (8888) (go to PROBLEM GAMBLING SECTION)
- refused (9999) (go to PROBLEM GAMBLING SECTION)

GR2b. Which recreational activities has it replaced?_____

PROBLEM GAMBLING

Go directly to the COMORBIDITIES SECTION if person's total monthly spending on gambling is less than \$10 a month (i.e., total of losses from GY1b + GY2b + GY3b + GY4b + GY5b + GY6b + GY7b + GY8b + GY9b + GY10b + GY11b + GY12b). (Note: any 'wins' are not added to this total. This procedure excluded 52.6% of the sample).

Note: If people clearly indicate that they don't have problems with gambling, say "I need to ask the rest of these questions in any case". However, if a person conveys this in a very insistent way or repeats this comment at any point, then they are not asked the rest of the questions and receive a score of 0 on each of the questions they would have normally been asked in this section (up to GP19). If a person refuses to

answer these questions and it is unclear whether they actually have gambling problems, then the rest of the questions are not asked and no values are imputed.

When answering the questions throughout the remainder of the survey, please think about the past 12 months. (CATI)

Please answer each of the following questions in this section , even in none apply to you (Online)

GP1. CPGI1. Thinking about the past 12 months, have you bet more than you could really afford to lose? Would you say:

- never (0)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP2. CPGI2. Thinking about the past 12 months, have you felt guilty about the way you gamble or what happens when you gamble? Would you say:

- never (0)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP3. CPGI3/PPGM11. In the past 12 months, have you needed to gamble with larger amounts of money to get the same feeling of excitement? Would you say:

- never (0)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP4. CPGI4/PPGM8b. In the past 12 months, when you gambled, did you go back another day to try to win back the money you lost? Would you say

- never (0)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP5a. CPGI5/PPGM1a. In the past 12 months, have you borrowed money or sold anything to get money to gamble? Would you say

- never (0) (go to GP6a)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP5b. In the past 12 months, about how much money have you borrowed or obtained from selling possessions in order to gamble? \$_____

- Unsure (8888)
- refused (9999)

GP6a. CPGI6/PPGM1b. In the past 12 months, has your gambling caused any financial problems for you or your household? Would you say:

- never (0) (go to GP7a)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP6b. In the past 12 months, have you filed for bankruptcy because of gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP7a. CPGI7/PPGM4. In the past 12 months, has your gambling caused you any health problems, including stress or anxiety? Would you say:

- never (0) (go to GP8)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP7b. In the past 12 months have these health problems caused you to seek medical or psychological help?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP8. CPGI8/PPGM7. In the past 12 months, have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true? Would you say:

- never (0)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP9. CPGI9. In the past 12 months, have you felt that you might have a problem with gambling? Would you say

- never (0)
- sometimes (1)
- most of the time, or (2)
- almost always (3)
- Unsure (8888)
- refused (9999)

GP10a. PPGM2. Has your involvement in gambling caused significant mental stress in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months?

- no (0) (go to GP11a)
- yes (1)
- Unsure (8888)
- refused (9999)

GP10b. In the past 12 months have you thought of committing suicide because of gambling?

- no (0) (go to GP11a)
- yes (1)
- Unsure (8888)
- refused (9999)

GP10c. In the past 12 months have you attempted suicide because of gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP10d. Would you like to know about the free gambling and mental health treatment services in your local area?

- no (0) (go to GP11a)
- yes (1) -> 1-866-332-2322 is AADAC's toll-free problem gambling help line.
- Unsure (8888)
- refused (9999)

GP11a. PPGM3a. Has your involvement in gambling caused significant problems in your relationship with your spouse/partner or important friends or family in the past 12 months?

- no (0) (go to GP12a)
- yes (1)
- Unsure (8888)
- refused (9999)

GP11b. In the past 12 months has gambling ever caused an instance of domestic violence in your household?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP11c. Has your involvement in gambling resulted in separation or divorce in the past 12 months?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP12a. PPGM3b. Has your involvement in gambling caused you to repeatedly neglect your children or family in the past 12 months?

- no (0) (go to GP13a)
- yes (1)
- Unsure (8888)
- refused (9999)

GP12b. In the past 12 months, has child welfare services become involved because of your gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP13a. PPGM5. Has your involvement in gambling caused significant work or school problems for you or someone close to you in the past 12 months or caused you to miss a significant amount of time off work or school?

- no (0) (go to GP14a)
- yes (1)
- Unsure (8888)
- refused (9999)

GP13b. In the past 12 months, about how many work or school days have you lost due to gambling? _____

- Unsure (8888)
- refused (9999)

GP13c. In the past 12 months, have you lost your job or had to quit school due to gambling?

- no (0) (go to GP14a)
- yes (1)
- Unsure (8888)
- refused (9999)

GP13d. In the past 12 months, have you received unemployment benefits or welfare payments as a result of losing your job because of gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP14a. PPGM6. Has your involvement in gambling caused you or someone close to you to write bad cheques, take money that didn't belong to you or commit other illegal acts to support your gambling in the past 12 months?

- no (0) (go to GP15)
- yes (1)
- Unsure (8888)
- refused (9999)

GP14b. In the past 12 months, about how much money have you illegally obtained in order to gamble? \$ _____

- Unsure (8888)
- refused (9999)

GP14c. In the past 12 months, have you been sued to get back money you spent gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP14d. In the past 12 months, has your gambling been a factor in your committing a crime for which you have been arrested?

- no (0) (go to GP15)
- yes (1)
- Unsure (8888)
- refused (9999)

GP14e. Were you convicted for this crime?

- no (0) (go to GP15)
- yes (1)
- Unsure (8888)
- refused (9999)

GP14f. What was the offence? _____

- Unsure (8888)
- refused (9999)

GP14g. Were you incarcerated for this crime?

- no (0) (go to GP15)
- yes (1)
- Unsure (8888)
- refused (9999)

GP14h. How many days were you incarcerated for? _____

- Unsure (8888)
- refused (9999)

GP15. PPGM8a. Have you often gambled longer, with more money or more frequently than you intended to in the past 12 months?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP16a. PPGM8c. In the past 12 months, have you made attempts to either cut down, control or stop gambling?

- no (0) (go to GP17b)
- yes (1)
- Unsure (8888)
- refused (9999)

GP16b. PPGM8d. Were you successful in these attempts?

- no (1)
- yes (0)
- Unsure (8888)
- refused (9999)

GP17a. PPGM9a. In the past 12 months, when you did try cutting down or stopping did you find you were very restless or irritable or that you had strong cravings for it?

- no (0)
- yes (1)
- Unsure (8888)

- refused (9999)

GP17b. PPGM9b. In the past 12 months, have you had strong cravings for gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP18. PPGM10. In the past 12 months, would you say you have been preoccupied with gambling?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

GP19. PPGM12 In the past 12 months, is there anyone else who would say that you were either preoccupied with gambling; or had a loss of control; or had withdrawal symptoms; or that you needed to gamble with larger amounts of money to achieve the same excitement?

- no (0)
- yes (1)
- Unsure (8888)
- refused (9999)

Go to the instructions prior to GP25 unless person scores 3 or more on the CPGI.

GP20. Are there particular types of gambling that have contributed to your problems more than others?

- no (0) (go to GP22a)
- yes (1)
- Unsure (8888) (go to GP22a)
- refused (9999) (go to GP22a)

GP21. Which ones? (do not read options)

- Lotteries (1)
- Instant win tickets (2)
- Bingo (3)
- Slot machines or other electronic gambling machines (i.e., VLTs) (4)
- Casino table games (i.e., blackjack, baccarat, roulette, craps, etc.) (5)
- Games of skill against other people (e.g., poker, pool, etc.) (6)
- Horse or dog racing (7)
- Sports Betting (8)
- High risk stocks, options, futures, or day trading (9)
- Other_____ (91)

GP22a. Have you ever *wanted* help for gambling problems in the past 12 months?

- yes (1)
- no (0) (go to GP22d)
- Unsure (8888)
- refused (9999)

GP22b. Have you *sought* help for gambling problems in the past 12 months?

- yes (1)
- no (0) (go to GP22d)
- Unsure (8888)
- refused (9999)

GP22c. Where did you seek help from? (do not read options)

- friends (1)
- family (2)
- Gambler's Anonymous (3)
- family doctor (4)
- psychologist (5)
- psychiatrist (6)
- counselling service (7)
- Pastor/minister/priest/etc. (8)
- telephone help/hotline (9)
- other_____ (91)
- Unsure (8888)
- refused (9999)

GP22d. Have you self-excluded yourself from any Alberta casino or racino in the past 12 months?

- yes (1)
- no (0)
- Unsure (8888)
- refused (9999)

GP23. Have you had problems with gambling *prior* to the past 12 months? (experienced significant problems as a result of gambling and/or had a preoccupation or loss of control associated with gambling).

- No (0)
- yes (1)
- Unsure (8888)
- refused (9999)

The following question only asked of people who have a score of 3 or higher on the CPGI, but report a total past year gambling loss of \$300 or less (GY1b + GY2b + GY3b + GY4b + GY5b + GY6b + GY7b + GY8b + GY9b + GY10b + GY11b + GY12b)[WHEN CALCULATING TOTAL LOSS, ONLY ADD QUESTIONS WITH A LOSS INDICATED (CODE 2/NEGATIVE AMOUNT), DO NOT ADD A WIN/POSITIVE AMOUNT]

GP24. I notice you report having some potential problems with gambling, but your total reported loss in the past 12 months is less than \$300. Can you explain?

-
- Unsure (8888)
 - refused (9999)

The following question only asked of people who have a score of 0 on the CPGI, but report a total past year gambling loss of \$1000 or more.

GP25. I notice you report having lost over \$1000 to gambling in the past 12 months, but don't report any problems or concerns with this. Can you explain?

-
- Unsure (8888)
 - refused (9999)

COMORBIDITIES

C1. Have you used tobacco in the past 12 months?

- yes (1)
- no (0)
- Unsure (8888)
- refused (9999)

C2. Have you used alcohol in the past 12 months?

- yes (1)
- no (0)
- Unsure (8888)
- refused (9999)

C3. Have you used street drugs in the past 12 months? (cannabis (marijuana, hashish, pot, etc.); hallucinogens (LSD, mushrooms, PCP, Special K, mescaline, etc.); cocaine or crack; amphetamine, methamphetamine or other stimulants (e.g., ecstasy); inhalants (e.g., glue, gas/petrol, paint thinner, nail polish, etc.); opiates (heroin, or nonmedical use of morphine, codeine, T3s, etc.); nonmedical use of sedatives, sleeping pills, or minor tranquilizers (Valium, Serepax, Rohypnol, etc.)

- yes (1)
- no (0)
- Unsure (8888)
- refused (9999)

C4. Have you had any problems with drugs or alcohol in the past 12 months? By this we mean difficulties in controlling their use that has led to negative consequences for you or other people.

- no (0)
- Yes (1)

- Unsure (8888)
- refused (9999)

C5a. Have you had any problems with other addictive behaviour in the past 12 months such as overeating, sex or pornography, shopping, exercise, Internet chat lines, or other things? Here again, what we mean is difficulties controlling the behaviour which has led to significant negative consequences for you or other people.

- yes (1)
- no (0) (go to C6)
- Unsure (8888) (go to C6)
- refused (9999) (go to C6)

C5b. Which specific activities have you had problems with? (do not read list; check off as many as apply)

- over-eating (1)
- sex or pornography (2)
- exercise (3)
- shopping (4)
- Internet chat lines (5)
- Video or Internet gaming (6)
- other _____ (91)
- Unsure (8888)
- refused (9999)

C6. In the past 12 months how would you rate your overall level of stress? Would you say

- very high (5)
- high (4)
- moderate (3)
- low (2)
- very low (1)
- Unsure (8888)
- refused (9999)

C7. In the past 12 months how would you rate your overall level of happiness? Would you say

- very high (5)
- high (4)
- moderate (3)
- low (2)
- very low (1)
- Unsure (8888)
- refused (9999)

C8a. In the past 12 months, have you had any serious problems with depression, anxiety or other mental health problems? (NOTE: If asked, 'serious' means something that either you or someone else would say is considerable, important, or major', either because of its frequency or significance)

- Yes (1)
- No (0) (go to C9)
- Unsure (8888)
- refused (9999) (go to C9)

C8b. Which one(s)_____

C9. Do you have any physical disability or chronic health problem that limits the amount or kind of activity you can do at home, work or school?

- Yes (1)
- No (0)
- Unsure (8888)
- refused (9999)

TRIANGULATION (ONLINE PANEL ONLY)

The sampling of 'unique' populations not captured by the other survey mode (Online or CATI) will be established by asking questions in the survey about how often (if ever) the person responds to telephone versus Internet surveys. The ability to integrate findings between the survey modes will depend on whether the results are the same when just comparing the subsample of individuals from each modality that have the same characteristics (i.e., equivalent age, gender, socioeconomic status, education, and Internet access).

T3 and T4 not asked in the CATI questionnaire.

T3. Do you have a telephone (household landline)?

- Yes (1)
- No (0)
- Unsure (8888)
- refused (9999)

T4. How often do you participate in telephone surveys when asked?

- Never (0)
- Sometimes (1)
- Often (2)
- Unsure (8888)
- refused (9999)

DEMOGRAPHICS

I just have a few final questions about your background so we can keep track of the characteristics of people who respond to the survey.

D3. At the present are you.....?

- Single (never married and not living common-law) (0)
- In common-law relationship (1)
- married (2)
- Separated, but still legally married (3)
- divorced , or (4)
- widowed (5)
- refused (9999)

D4. What is the highest level of education you have completed? _____

- Less than high school graduation (1)
- Completed high school and/or some post-secondary (2)
- Trades certificate or diploma (3)
- College certificate or diploma (4)
- University certificate, diploma or degree (5)
- refused (9999)

D5. Are you currently a full or part-time student?

- No (0)
- Part time student (1)
- Full time student (2)
- refused (9999)

D6. Are you presently working for pay in a full-time or in a part-time job?

- No (0)
- Employed part-time (1)
- Employed full-time (2)
- refused (9999)

D6a. Could you tell me how many adults age 18 or older in addition to yourself live in your household?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5+ (5)
- Unsure (8888)
- Refused (9999)

D7. To the nearest \$10,000, what was your approximate income last year? Would you say (keep on reading options until respondent provides answer)

- less than \$20,000 (1)
- \$20,000 (2)
- \$30,000 (3)
- \$40,000 (4)
- \$50,000 (5)
- \$60,000 (6)
- \$70,000 (7)
- \$80,000 (8)
- \$90,000 (9)
- \$100,000 (10)
- \$110,000 (11)
- \$120,000 (12)
- More than \$120,000 (13)
- Exact amount_____ (14)
- Unsure (8888)
- refused (9999)

D8a. What do you estimate your current debt to be? This would include mortgages, credit cards, loans, car payments, etc.? Would you say (keep on reading options until respondent provides answer)

- 0 (no debt) (0)
- Less than \$10,000 (1)
- \$10,000 (2)
- \$20,000 (3)
- \$40,000 (4)
- \$60,000 (5)
- \$80,000 (6)
- \$100,000 (7)
- \$120,000 (8)
- \$140,000 (9)
- \$160,000 (10)
- \$180,000 (11)
- \$200,000 (12)
- \$300,000 (13)
- \$400,000 (14)
- \$500,000 (15)
- More than \$500,000 (16)
- Exact amount_____ (17)
- Unsure (8888)
- refused (9999)

Do not ask D8b of people who did not qualify for the PROBLEM GAMBLING SECTION and/or have no debt.

D8b. What percentage of this debt has resulted from gambling?_____

- Unsure (8888)
- refused (9999)

D9. Were you born in Canada?

- No (0)
- Yes (1)
- Refused (9999)

D10a. What are the main ethnic or cultural origins of your ancestors? Would you say...

- Western European (*i.e., Austria, Belgium, Denmark, England, Finland, France, Germany, Greece, Holland, Ireland, Italy, Norway, Portugal, Scotland, Spain, Sweden, Switzerland, Wales*) (1) (go to D11)
- Eastern European (*i.e., Belarus, Bulgaria, Czechoslovakia, Hungary, Moldavia, Poland, Romania, Russia, Slovakia, Ukraine*) (2) (go to D11)
- South Asian (*i.e., Bangladesh,, India, Pakistan, Sri Lanka*) (3) (go to D11)
- East Asian (*i.e., Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Laos, Malaysia, Phillipines, Thailand, Vietnam*) (4) (go to D11)
- Aboriginal, Inuit or Métis (5)
- African (6) (go to D11)
- Latin American (*i.e., Mexico, all Central American countries, all South American countries*) (7) (go to D11)
- Other_____ (91) (go to D11 unless person indicates Aboriginal, Inuit or Metis)
- Unsure (8888) (go to D11)
- refused (9999) (go to D11)

If person provides a specific country that fits into one of these categories then code it into that category. If person answers 'Canadian', 'white', or something similar, then ask a clarifying question (e.g., Where did your ancestors live before coming to Canada, etc.).

D10b. Which First Nation group are you a member of?_____

- Unsure (8888)
- refused (9999)

D11. What is your postal code?_____ (both FSA & LCW required)

- Unsure (8888)
- refused (9999)

D12. What community do you live in?_____

INTERVIEWER DEMOGRAPHICS (CATI ONLY)

I1. Interviewer gender

- Male (1)
- Female (2)

I2. Interviewer year of birth _____

I3. Interviewer ethnic/cultural origins

- Western European (*i.e., Austria, Belgium, Denmark, England, Finland, France, Germany, Greece, Holland, Ireland, Italy, Norway, Portugal, Scotland, Spain, Sweden, Switzerland, Wales*) (1)
- Eastern European (*i.e., Belarus, Bulgaria, Czechoslovakia, Hungary, Moldavia, Poland, Romania, Russia, Slovakia, Ukraine*) (2)
- South Asian (*i.e., Bangladesh,, India, Pakistan, Sri Lanka*) (3)
- East Asian (*i.e., Cambodia, China, Hong Kong, Indonesia, Japan, Korea, Laos, Malaysia, Phillipines, Thailand, Vietnam*) (4)
- Aboriginal, Inuit or Métis (5)
- African (6)
- Latin American (*i.e., Mexico, all Central American countries, all South American countries*) (7)
- Other_____ (91)

2009 Survey

The 2009 survey was also conducted by Consumer Contact. All procedures were identical to the 2008 survey with the exception of the following:

Sample sizes for the 3 groups were different:

- General Population Telephone Sample ($N = 1,004$) (compared to 3,001 in 2008). (Note: budgetary constraints precluded a larger sample size).
- Targeted Telephone Sample ($N = 3,624$) (compared to 4,512 in 2008).
 - 400 people were sampled from each of the 9 following geographic areas: 4 areas that did not have casinos prior to their introduction in late 2007/early 2008 (Cold Lake area; Whitecourt area; Camrose area; Morley area), and 5 areas that have had casinos for many years (Fort McMurray area; Grande Prairie area; Red Deer area; Medicine Hat area; Lethbridge area).
- Online Sample ($N = 1,006$) (compared to 2,019 in 2008).

There was also a change in the online recruitment method. This change was implemented because the prevalence rates of gambling, problem gambling, and associated comorbidities in the 2008 online sample was considerably higher than that obtained in the General Population telephone survey, making the result uncomparable (e.g., the prevalence rate of problem gambling was 2.2 times higher). It was thought that the email solicitation may have over-recruited gamblers and problem gamblers because it stated that the survey was about 'gambling'. Thus, the introduction to the 2009 email changed from indicating it was a gambling survey to "We have a short survey about recreational activities in Alberta being conducted by the University of Lethbridge and University of Alberta. The recreational activity that you are being asked about is randomly chosen. This survey will take 10 to 15 minutes to complete for most people." (Note: this procedure made the two rates more comparable, but the online survey still produced a rate 1.8 times higher.)

Other specific changes to the questionnaire were as follows (Note: budgetary constraints required some shortening of the questionnaire):

Past Year Gambling

Following questions were eliminated: GY13a, GY13b, GY14a, GY14b.

New question added:

GY15. Compared to last year, are you gambling more, less, or about the same?

- More (1)
- Less (2)
- Same (3)
- Unsure (8888)
- Refused (9999)

Gambling Motivation

GM1 eliminated.

Gambling Recreation/Entertainment

GR1, GR2a, GR2b eliminated.

Problem Gambling

Problem Gambling question eligibility criterion changed from spending \$10/month (eliminating 52.6% of the total sample) to gambling at least 1/month on any form (eliminating 48.3% of the total sample).

GP24 & GP25: GY8b was no longer used in the calculation. Also, net win/loss, rather than just losses was used (i.e., subtracting any reported wins from reported losses).

Criteria for asking GP24 and GP25 were expanded:

GP24. I notice you report having some potential problems with gambling, but your total reported loss in the past 12 months is less than \$300. Can you explain? OR I notice you report having some potential problems with gambling, but you only report gambling once a month in the past 12 months. Can you explain?

GP25. I notice you report having lost over \$1000 to gambling in the past 12 months, but don't report any problems or concerns with this. Can you explain? OR I notice you report gambling at least once a week, but don't report any problems or concerns with this. Can you explain?

Comorbidities Section

C5a, C5b, C6, C7 eliminated.

Three new 'validity questions':

C10. Have you ever been ill? Would you say....Note: if asked, this refers to lifetime and includes minor illnesses such as colds, flu, etc.

- No, never (0)
- Yes, occasionally (1)
- Yes, frequently (2)
- Yes, I've always been unwell (3)
- Unsure (8888)
- Refused (9999)

C11. Do you have pleasant memories from your childhood? Would you say

- None at all (0)
- Several (1)
- Most, or (2)
- All of my childhood memories are pleasant (3)
- Unsure (8888)
- Refused (9999)

C12. If you had to watch a sport on TV which would it be?

- Archery (1)
- Hockey (2)
- Football, or (3)
- Basketball (4)
- Unsure (8888)
- Refused (9999)

Demographics

D12. List of the most populace Alberta communities provided to interviewers to aid in coding.

New 'End' Section (After Comorbidities)

E1. Do you recall doing this same survey a year ago?

- No (0)
- Yes (1)
- Unsure (8888)
- Refused (9999)

E2. On a scale from 1 to 5, how truthfully would you say have you answered the questions in this survey, with a 5 being completely truthfully and a 1 being not very truthfully?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- Unsure (8888)
- Refused (9999)

Response Rate

An overall response rate of 33.1% to the General Population telephone survey and 24.1% to the Targeted telephone survey was achieved using response calculations of the Council of American Survey Research Organizations (CASRO, 1982).

| | General Population | Targeted |
|-------------------------------------------------------------------------------------------------|-----------------------|------------------|
| INELIGIBLE NUMBERS | <i>n</i> = 5937 | <i>n</i> = 8685 |
| Not in Service | 3046 | 871 |
| Fax/Modem/Cell | 658 | 1328 |
| Business Number | 457 | 442 |
| Dialler Returns | 5 | 18 |
| Bad Line/Inaudible/Disconnected | 47 | 835 |
| Language Difficulties | 59 | 151 |
| Illness, Incapable | 2 | 32 |
| No one in Household 18+ | 28 | 48 |
| Selected/Eligible Respondent not Available | 1635 | 4960 |
| ELIGIBILITY NOT DETERMINED | <i>n</i> = 3198 | <i>n</i> = 11739 |
| Busy | 66 | 143 |
| Answering Machine | 1034 | 3803 |
| No Answer | 1474 | 4465 |
| Household Refusal | 624 | 3328 |
| ELIGIBLE | <i>n</i> = 2169 | <i>n</i> = 9072 |
| Respondent Refusal | 1167 | 5447 |
| Completed Interviews | 1002 | 3625 |
| Eligibility rate: Eligibles ÷ (Eligibles + Ineligibles) | 26.8% | 51.1% |
| Estimated # of Eligibles: Eligibles + (Eligibility not Determined x Eligibility Rate) | 3026 | 15072 |
| Response rate: Completions ÷ Estimated # of Eligibles | 33.1% | 24.1% |

Appendix B: Problem and Pathological Gambling Measure (PPGM)

1a. Has your involvement in gambling caused you either to borrow a significant²¹ amount of money or sell some of your possessions in the past 12 months? (Yes/No).

1b. Has your involvement in gambling caused significant financial concerns for you or someone close to you in the past 12 months? (Yes/No). (Note: do not score 1 for 1b if 1 has already been scored for 1a).

2. Has your involvement in gambling caused significant mental stress in the form of guilt, anxiety, or depression for you or someone close to you in the past 12 months? (Yes/No).

3a. Has your involvement in gambling caused serious problems²² in your relationship with your spouse/partner, or important friends or family in the past 12 months? (Note: Family is whomever the person themselves defines as "family")(Yes/No).

3b. Has your involvement in gambling caused you to repeatedly neglect your children or family in the past 12 months? (Yes/No). (Note: do not score 1 for 3b if 1 has already been scored for 3a).

4. Has your involvement in gambling resulted in significant health problems or injury for you or someone close to you in the past 12 months? (Yes/No).

5a. Has your involvement in gambling caused significant work or school problems for you or someone close to you in the past 12 months? (Yes/No).

5b. Has your involvement in gambling caused you to miss a significant amount of time off work or school in the past 12 months? (Yes/No). (Note: do not score 1 for 5b if 1 has already been scored for 5a).

6. Has your involvement in gambling caused you or someone close to you to write bad cheques, take money that didn't belong to you or commit other illegal acts to support your gambling in the past 12 months? (Yes/No).

7. Is there anyone else who would say that your involvement in gambling in the past 12 months has caused any significant problems regardless of whether you agree with them or not? (Yes/No).

PROBLEMS SCORE

/7

²¹ If people ask what 'significant' means, say 'significant means something that either you or someone else would say is considerable, important, or major', either because of its frequency or seriousness.

²² If people ask what 'problem' means say 'a difficulty that needs to be fixed'.

8. In the past 12 months, have you often gambled longer, with more money or more frequently than you intended to? (Yes/No).

9. In the past 12 months, have you often gone back to try to win back the money you lost? (Yes/No).

10a. In the past 12 months, have you made any attempts to either cut down, control or stop your gambling? (Yes/No). (go to 11 if 'no') (this item not scored)

10b. Were you successful in these attempts? (Yes/No). (score '1' for no and '0' for yes)

11. In the past 12 months, is there anyone else who would say that you have had difficulty controlling your gambling, regardless of whether you agreed with them or not? (Yes/No).

IMPAIRED CONTROL SCORE /4

12. In the past 12 months, would you say you have been preoccupied with gambling? (Yes/No).

13. In the past 12 months, when you were not gambling did you often experience irritability, restlessness or strong cravings for it? (Yes/No).

14. In the past 12 months, did you find you needed to gamble with larger and larger amounts of money to achieve the same level of excitement? (Yes/No).

OTHER ISSUES SCORE /3

TOTAL SCORE /14

Appendix C: PPGM Scoring and Classification

PATHOLOGICAL GAMBLER (4)

1. Problems Score of 1 or higher, plus
2. Impaired Control Score of 1 or higher, plus
3. Total Score of 5 or higher, plus
4. Reported gambling frequency of at least once a month on some form of gambling.

PROBLEM GAMBLER (3)

1. Problems Score of 1 or higher, plus
 2. Impaired Control Score of 1 or higher, plus
 3. Total Score of 2 to 4, plus
 4. Reported gambling frequency of at least once a month on some form of gambling.
- OR

1. Total Score of 3 or higher, plus
2. Frequency of gambling²³ AND average reported gambling loss (not net loss)²⁴ > median for unambiguously identified Problem and Pathological Gamblers in the population (i.e., as established by the most recent population prevalence survey).

AT RISK GAMBLER (2) (this category also includes people who may be problem gamblers in denial)

1. Does not meet criteria for Problem or Pathological gambling, plus
 2. Total Score of 1 or higher
- OR

1. Frequency of gambling¹ AND average reported gambling loss (not net loss)² > median for unambiguously identified Problem and Pathological Gamblers in the population (i.e., as established by the most recent population prevalence survey).

RECREATIONAL GAMBLER (1)

- Gambler who does not meet criteria for Pathological, Problem or At-Risk gambler.

NON-GAMBLER (0)

- No reported gambling on any form in past year.

Appendix D: LETHBRIDGE REGIONAL POLICE SERVICE DATA

²³ Simplest way of establishing this is using the highest frequency of gambling reported for any individual form in the past year.

²⁴ Reported gambling losses tend to be a more accurate estimate of true losses compared to net loss, especially in problem gamblers (i.e., problem gamblers often report winning as much or more than they lose and thus may not report any net loss) (Wood, R.T. and Williams, R.J. (2007). How much money do you spend on gambling? The comparative validity of question wordings used to assess gambling expenditure. International Journal of Social Research Methodology: Theory & Practice, 10 (1), 63-77. <http://hdl.handle.net/10133/752>. Note: The person's income and net worth/debt can be taken into account when deciding whether the gambling loss criterion should apply.

CONFIDENTIALITY AGREEMENT FOR SEIGA RESEARCHERS

Agreement executed this 3rd day of February, 2010, by and between Jennifer N. Arthur of, The SEIGA Research Project, The University of Lethbridge, Lethbridge, Alberta (Researcher) and the Lethbridge Regional Police Service. Researcher is engaged in research into the social and economic impacts of gambling specifically described as follows:

The Lethbridge Police Service collects and maintains certain data (the "Data") that will or may assist Researcher in this regard. Researcher agrees and acknowledges that confidentiality is of the utmost importance in the use of the Data and in the manner in which all research results are presented and/or published. Accordingly, in consideration of his/her receipt of the Data from the LETHBRIDGE REGIONAL POLICE SERVICE, Researcher agrees as follows:

1. Researcher agrees to treat the Data received from THE LETHBRIDGE REGIONAL POLICE SERVICE as private, non-public information. The Data will be used solely for the specified research described hereinabove and not for any other purpose. The Data will never be used as a basis for legal, administrative or other adverse actions that can directly affect any individual about whom personal and/or legal information is included in the Data.
2. Researcher understands and agrees that any and all Data which may lead to the identity of any officer, offender, victim, witness, bystander, or any other person, business, or reporting facility is strictly privileged and confidential and agrees to keep all Data strictly confidential at all times.
3. Researcher agrees **NOT** contact or attempt to contact, for the purposes of soliciting information, clarification, or interviewing any individual, business, agency, or institution named in the Data received from the LETHBRIDGE REGIONAL POLICE SERVICE. In the course of day to day business the researcher is likely to come in contact with individuals, businesses, agencies, or institutions named in the Data received from the LETHBRIDGE REGIONAL POLICE SERVICE; Researcher agrees not disclose, either verbally or in writing, any knowledge of the situation, context, incident, individual, business, agency, or institution or being named in the Data received from the LETHBRIDGE REGIONAL POLICE SERVICE.
4. If, in the course of his/her research, Researcher believes it necessary to provide access to the Data to any other individual, Researcher will **NOT** do so unless and until such individual has properly executed a Data Confidentiality Agreement that has been accepted, in writing, by THE LETHBRIDGE REGIONAL POLICE SERVICE. And, Researcher agrees to notify THE LETHBRIDGE REGIONAL POLICE SERVICE in writing within forty-eight (48) hours of his/her becoming aware of any violation of this Confidentiality Agreement or any Confidentiality Agreement executed by any other individual, including full details of the violation and corrective actions to be taken by Researcher.
5. Researcher further agrees that all data provided under the provisions of this Data

Confidentiality Agreement may only be used for the purposes described hereinabove, and that any other or additional use of the data may result in immediate termination of this Confidentiality Agreement by THE LETHBRIDGE REGIONAL POLICE SERVICE.

6. Researcher agrees that (i) any and all reports or analyses of the Data prepared by Researcher shall contain only aggregate data. Researcher further agrees that (ii) at no time will he/she ever publish any individual names or other personally identifying information or information which could lead to the identification of any Data subject, and (iii) will provide a copy of any report or paper containing Data received from the LETHBRIDGE REGIONAL POLICE SERVICE to the LETHBRIDGE REGIONAL POLICE FORCE for review prior to publication. 6. Researcher agrees that linkage to another database is not permitted for the purpose of identifying an individual on the file, but may be permitted if appropriate linkage is described in the proposal and this linkage is approved by the THE LETHBRIDGE REGIONAL POLICE SERVICE.

7. Researcher will not take any action that will provide any Data furnished by THE LETHBRIDGE REGIONAL POLICE SERVICE to any unauthorized individual or agency without the prior written consent of THE LETHBRIDGE REGIONAL POLICE SERVICE.

8. Researcher will not discuss in any manner, with any unauthorized person, information that would lead to identification of individuals described in the Data furnished by THE LETHBRIDGE REGIONAL POLICE SERVICE. Also, Researcher will not provide any computer password or file access codes that protect the Data to any unauthorized person.

9. Should Researcher become aware of any unauthorized access or disclosure of the Data to other persons, Researcher will report it immediately to THE LETHBRIDGE REGIONAL POLICE SERVICE. Researcher understands that failure to report violations of confidentiality by others shall be considered as Researcher's own violation and may result in civil or criminal penalties and termination of current and future access to confidential data.

10. In the event that any attempt is made to obtain from Researcher any or all of the Data provided to Researcher by THE LETHBRIDGE REGIONAL POLICE SERVICE by subpoena or other legal means, Researcher will notify THE LETHBRIDGE REGIONAL POLICE SERVICE immediately. Researcher agrees that THE LETHBRIDGE REGIONAL POLICE SERVICE may employ attorneys of its own selection to appear and defend the claim or action on behalf of THE LETHBRIDGE REGIONAL POLICE SERVICE. THE LETHBRIDGE REGIONAL POLICE SERVICE, at its option, shall have the sole authority for the direction of the defense and shall be the sole judge of the acceptability of any compromise or settlement of any claims or action against THE LETHBRIDGE REGIONAL POLICE SERVICE.

11. Researcher's obligations hereunder shall remain in full force and effect and survive the completion of Researcher's research project described hereinabove.

12. The terms of this Confidentiality Agreement shall be binding upon Researcher, his/her agents, assistants and employees.

13. Notwithstanding any contrary language in this Confidentiality Agreement, Researcher acknowledges and agrees that Researcher's access to the Data maintained by the LETHBRIDGE REGIONAL POLICE SERVICE shall at all times be in the sole discretion of the LETHBRIDGE REGIONAL POLICE SERVICE.

14. THE LETHBRIDGE REGIONAL POLICE SERVICE reserves the right to review any and all of Researcher's reports prior to dissemination or Researcher's manuscripts before submission for publication to ensure that confidentiality is not violated and the Data are used appropriately.

15. Researcher understands that access to the Data will be terminated when the report is submitted to the LETHBRIDGE REGIONAL POLICE SERVICE. However, the researcher may request in writing an extension to access the Data.

16. If Researcher is required by any other party or parties, to execute any additional confidentiality agreement(s) as a condition of access to the Data, in the event of a conflict between the provisions of such agreement and this Agreement, Researcher agrees that the most restrictive agreement shall prevail.

17. This Confidentiality Agreement shall be governed by and interpreted under the laws of the Province of Alberta.

Dated this 3rd day of February, 2010.

Dr. Robert Williams
SEIGA Principal Investigator
E-mail: robert.williams@uleth.ca
Phone: (403) 382-7128

Jennifer N. Arthur
SEIGA Project Manager
E-mail: jennifer.arthur@uleth.ca
Phone: (403) 488-9179

Received and accepted this ____ day of _____, 2010.

Lethbridge Regional Police Service
Name:
Position:
E-mail address:
Phone: