What Proportion of Gambling Revenue is Derived from Problem Gamblers?

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Alberta Gambling Research Institute Conference
Banff, Alberta
April 2016
Funding Sources: Ontario Problem Gambling Research Centre & Alberta Gambling Research Institute

Potential Conflicts of Interest: None
The demographic origin of gambling revenue has important philosophical, sociological and government policy implications.
• **15% – 50%** of gambling revenue comes from problem gamblers depending on the jurisdiction and time period


Contrary Views

- “5% to 15% of gross gaming revenue comes from problem and pathological gamblers”
  - National Center for Responsible Gaming (2016) Do Casinos make Money off of Problem Gamblers?

- “we conservatively estimate the share of total gaming revenue from Ontario problem gamblers to be much closer to 5.7%”
Purpose of presentation

1. To reassure people that the academic research evidence on this issue is solid.

2. To point out that this finding, rather than being surprising, is actually very commonsensical.
Pareto Principle

- In most businesses 20% of patrons account for 80% of sales
- Also known as 80/20 rule

The top 20% of your clients generate 80% of your profit
5/50; 10/65; 20/80; 40/95
2014 Highlights: 2,873 or 18% of Customers

Contributed 79% of Sales

Cumulative Customer Count

Cumulative % of STADIS\textregistered
Ticket F&B, Merch Sales

Cumulative Customers
CUM % Sales

Sales Numbers Include F&B, Retail Merchandise Sales, Exclude Breakage

Merchandise Sales: Customers
The top 22 items produce 80% of total sales.
Pareto principle in movies

Movie Revenue
Health Care Spending

5% of Ontario residents account for 65% of Health Care Spending

The Pareto principle (80/20 Rule) in U.S. healthcare spending
Percentage of U.S. population, healthcare costs

<table>
<thead>
<tr>
<th>% of Population</th>
<th>% of Healthcare Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>20%</td>
<td>80%</td>
</tr>
</tbody>
</table>

SOURCE: Obama administration; Supreme Court of the United States of America brief no. 11-398;
20% of the users account for 84% of the tweets

Fig. 1

Tweets
Traffic from Regular Visitors 80%  
Traffic from Other Visitors 20%  
Source: AdesBlog.com
• **US**: 5-6% of population commits 50-60% of all recorded crime

• **UK**: 9% of offenders commit 62% of all offenses
• Most people spend 80% of their time with 20% of their friends.

• 20% of the clothes in the closet tend to be worn 80% of the time.

• 20% of scientific works receive 80% of the citations
• This is just a common consumption pattern for **regular** consumer products.

• What about the consumption patterns for consumer products with **addiction** potential?
Drugs

- Most tobacco, methamphetamine, and heroin users are dependent on these substances.

- Thus, although no formal data, it is reasonable to assume that most consumption is done by addicts and the large majority of the revenue from purchasing these products comes from addicts.
Alcohol Consumption

Average # Drinks per Week in U.S. in 2006 as a Function of Population Decile

US National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)
Alcohol Consumption

The top 10% of drinkers account for 60% of alcohol consumed in the United States

“....the heaviest drinkers are of greatly disproportionate importance to the sales and profitability of the alcoholic-beverage industry. If the top decile somehow could be induced to curb their consumption level to that of the next lower group (the 9th decile), then total ethanol sales would fall by 60 percent.”


How much do the top 10% drink?
Online Gambling Records

- Bwin Interactive Entertainment 2005 - 2007
  - 2.8% of gamblers accounted for 50% of revenue
  - 10.7% of gamblers accounted for 80% of revenue
- Transparency Project, Division on Addiction, Cambridge Health Alliance
Player Card Data

- **Australia**
  - 2.0% of gamblers account for 80% of revenue

- **U.S. Native Casino**
  - 9.3% of gamblers account for 80% of revenue
  - "Politically, we don't want to talk about it being more concentrated than other industries," said Andrew Klebanow, a marketing specialist who has consulted for dozens of casinos. He said the Bwin results are in line with his own estimates, based on confidential casino data, that many U.S. casinos get about 90% of their revenue from 10% of customers. *Wall Street Journal*, Oct 17, 2013.
Population Surveys

Gambling Revenue

<table>
<thead>
<tr>
<th>Percentage of the Sample</th>
<th>Cumulative % of Reported Gambling Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>30%</td>
<td>50%</td>
</tr>
<tr>
<td>40%</td>
<td>70%</td>
</tr>
<tr>
<td>50%</td>
<td>90%</td>
</tr>
<tr>
<td>60%</td>
<td>95%</td>
</tr>
<tr>
<td>70%</td>
<td>99%</td>
</tr>
<tr>
<td>80%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Alberta 2008/2009

<p>| 5% of gamblers | 73.4% revenue |
| 10% of gamblers | 81.3% revenue |
| 20% of gamblers | 89.1% revenue |</p>
<table>
<thead>
<tr>
<th>Location</th>
<th>Revenue from Problem Gamblers (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. &amp; Canadian provinces</td>
<td>30% (Lesieur, 1998)</td>
</tr>
<tr>
<td>United States</td>
<td>15% (Gerstein et al., 1999)</td>
</tr>
<tr>
<td>Australia</td>
<td>33% (Productivity Commission, 1999)</td>
</tr>
<tr>
<td>New Zealand</td>
<td>19% (Abbott &amp; Volberg, 2000)</td>
</tr>
<tr>
<td>Canada</td>
<td>32% (Williams &amp; Wood, 2004a)</td>
</tr>
<tr>
<td>Ontario</td>
<td>30% (Williams &amp; Wood, 2004b, 2007)</td>
</tr>
<tr>
<td>Australia</td>
<td>36% (Productivity Commission, 2010)</td>
</tr>
<tr>
<td>U.K.</td>
<td>1 - 30% (Orford et al., 2013)</td>
</tr>
</tbody>
</table>
Some concern about the fact that these proportions are sometimes different between jurisdictions and sometimes do not have a good match to actual gambling revenues.
# Reported Expenditure/Actual Revenue

<table>
<thead>
<tr>
<th>Country</th>
<th>0.3 lotteries</th>
<th>0.0 casinos (reported winning $3 billion)</th>
<th>0.0 racetracks (reported winning $2 billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>United States</strong></td>
<td>(Gerstein et al., 1999)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Australia</strong></td>
<td>1.4 lotteries</td>
<td></td>
<td>Ratio lower than actual for wagering &amp; EGMs</td>
</tr>
<tr>
<td>(Productivity Commission, 1999)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>New Zealand</strong></td>
<td>Ratio much higher than actual for lotteries</td>
<td>~1.0 horse &amp; dog racing</td>
<td></td>
</tr>
<tr>
<td>(Abbott &amp; Volberg, 1999)</td>
<td></td>
<td></td>
<td>Ratio much lower than actual for casinos &amp; EGMs</td>
</tr>
<tr>
<td><strong>6 U.S. States</strong></td>
<td>4.5 horse racing</td>
<td>2.4 lottery</td>
<td></td>
</tr>
<tr>
<td>(Volberg et al., 2001)</td>
<td></td>
<td>4.1 casino table games</td>
<td>1.1 EGMs</td>
</tr>
<tr>
<td></td>
<td>3.1 bingo</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Canada</strong></td>
<td>2.1 overall</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Williams &amp; Wood, 2004a)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Some question wordings produce much better match between expenditure & revenue

- Asked about gambling expenditure 12 different ways to 2,424 randomly selected Ontario adults

<table>
<thead>
<tr>
<th>Roughly how much money did you spend</th>
<th>on gambling</th>
<th>in a typical month?</th>
<th>What we mean here is how much you are ahead or behind, or your net win or loss.</th>
</tr>
</thead>
<tbody>
<tr>
<td>in total on lottery, raffle and instant win tickets, Sports Select, slot machines and table games at Ontario casinos and racetracks, horse race betting, and bingo</td>
<td>on specific gambling activity (8 different types)</td>
<td>last time you purchased/played (this activity)? How often do you purchase/play (this activity)?</td>
<td></td>
</tr>
</tbody>
</table>

- Compared each of these 12 ways against actual Ontario gambling revenue and one month prospective diaries amounts of subset of 364 Ontario gamblers (+ 211 Alberta gamblers)
Some question wordings produce much better match between expenditure & revenue

- Reported expenditure varied by **FACTOR OF 5** depending on question.
  - LOWEST: “Roughly how much money do you come out ahead or behind on gambling in a typical month?” (significant **underestimate**)
  - HIGHEST: “Roughly how much money did you spend on [specific format] the last time you purchased/played [specific format]. How often do you purchase play [specific format]? (significant **overestimate**)

- Poor correlation between estimates and subsequent diary amounts for most questions

- Best match to diary amounts and actual gambling revenue:
  “**Roughly how much money do you spend on [specific format] in a typical month?**”

Expenditure/Revenue Match using this Wording

<table>
<thead>
<tr>
<th></th>
<th>% Expenditure from Problem Gamblers</th>
<th>Expenditure/Revenue match</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberta 2010/2011</td>
<td>50%</td>
<td>108%</td>
</tr>
<tr>
<td>Ontario 2011</td>
<td>24%</td>
<td>88%</td>
</tr>
<tr>
<td>Massachusetts 2013</td>
<td>16%</td>
<td>110% horse racing 217% lottery</td>
</tr>
</tbody>
</table>
Conclusions

Converging lines of evidence indicate that a substantial portion of gambling revenue derives from problem gamblers

- Ranging from 15% – 50%
The exact proportion depends on:

1. **Type of gambling**
   - much higher for continuous forms (e.g., EGM) & much lower for non-continuous forms (e.g., lotteries)

2. **The specific jurisdiction**
   - jurisdictions vary in the types of gambling available, strength of their initiatives to prevent problem gambling, and vulnerability of their population

3. **The specific time period studied**
   - problem gambling highest after initial introduction of gambling, then declines
   - gambling availability and prevention policies change
What about these contrary claims?

… “5% to 15% of gross gaming revenue comes from problem and pathological gamblers”

- National Center for Responsible Gaming (2016) *Do Casinos Make Money off of Problem Gamblers?*

- 5% to 15% figure is from a single study: *Gerstein et al. (1999)*

- Misrepresentation of the actual findings: 15% overall, with a range of 8% for lotteries to 22.1% for casinos (pages ix & 33-34)

- Study conducted 18 years ago in U.S. before major casino expansion

- Study with the poorest match between reported expenditure and actual revenue:
  - 0.3 lotteries
  - 0.0 casinos (U.S. citizens reported winning $3 billion)
  - 0.0 racetracks (U.S. citizens reported winning $2 billion)
What about these contrary claims?

“we conservatively estimate the share of total gaming revenue from Ontario problem gamblers to be much closer to 5.7%”


- Added revenue from U.S. gamblers to the denominator, but restricted numerator to expenditure of just Ontario problem gamblers
- Used 2003 revenue, when U.S. gamblers accounted for 42% of revenue, rather than 2011 when U.S. gamblers accounted for just 2.5%.
- Used 2011 prevalence of problem gambling (1.0%), rather than the problem gambling prevalence in 2003 (3.0%).
Policy Observations

- The % of gambling revenue directed to problem gambling prevention, treatment, and research is very small compared to the amount contributed by problem gamblers.
  - 1.65% in Canada in 2013/2014

- In most countries the efforts to reduce the revenue reliance on problem gamblers (and reduce the harm and prevalence of problem gambling) are fairly weak.
Policy Observations

- Prevention efforts tend to rely primarily on the weak strategy of *educating the gambler*, whereas *constraining the availability and provision* of potentially dangerous products is far more effective, and is what has primarily been used to reduce the harm from drugs, alcohol, tobacco, firearms, and motor vehicles.

<table>
<thead>
<tr>
<th></th>
<th>ALCOHOL</th>
<th>GAMBLING</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimum price</strong></td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td><strong>Limits on maximum provision</strong></td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Limits on 24 hour availability</td>
<td>YES</td>
<td>NO (poker)</td>
</tr>
<tr>
<td>Legal liability for over-serving customers and monitoring compliance with this</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Laws penalizing public overconsumption</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Prohibition of consumption in circumstances that endanger other people</td>
<td>YES (driving)</td>
<td>NO</td>
</tr>
</tbody>
</table>